1952 S.A. MEDICAL CONGRESS: JOHANNESBURG, 22-27 SEPTEMBER

South African Medical Journal

Organ of the Medical Association of South Africa

S.-A. Tydskrif vir Geneeskunde

Vakblad van die Mediese Vereniging van Suid-Afrika

Incorporating the *South African Medical Record* and the *Medical Journal of South Africa*

REGISTERED AT THE GENERAL POST OFFICE AS A NEWSPAPER

Vol. 26, No. 26 | Cape Town, 28 June 1952 | Weekly 2s 6d

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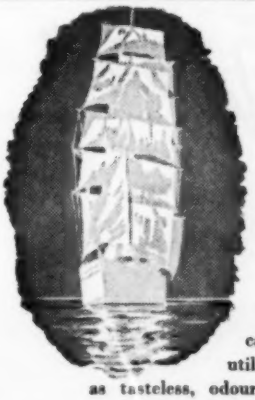

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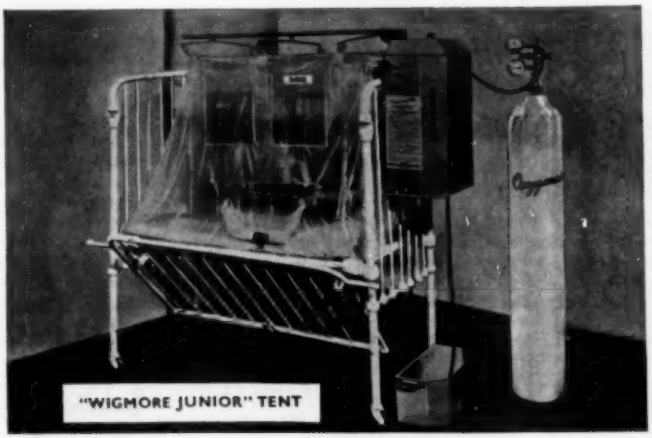

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CONGENITAL DUODENAL STENOSIS AND MONGOLISM

REPORT OF A CASE

J. H. Louw, Ch.M.

Department of Surgery, University of Cape Town and The Children's Surgical Unit, Groote Schuur Hospital, Observatory, C.P.

In a recent publication Bodian, White, Carter and Louw [1] drew attention to the frequency with which intrinsic obstruction of the duodenum in the newborn is associated with mongolism. They estimate that the frequency of mongolism in these infants is probably higher than 1 in 3 cases.

During the course of the investigation which led to the above publication the author had the opportunity of discussing the problem with many paediatricians and surgeons. It was interesting to find that most of them had encountered similar cases but the great frequency of the association was not generally appreciated. It was also noted that the incidence of mongolism was even greater when the obstruction in the duodenum was situated at or above the biliary papilla. Indeed, in these cases the incidence is probably in the region of 2 in every 3 cases.[2] On the other hand, the converse association, viz. the presence of duodenal obstruction in mongols is distinctly uncommon.[3]

In view of the above observations the following case was of particular interest to the author. It is the first of its kind to be encountered at the Groote Schuur Hospital since the inception of the hospital in 1938.

CASE REPORT

L.A.P., a full-term male infant, was admitted to Groote Schuur Hospital on 21 January 1952, aged 6 weeks, with a history of vomiting since birth.

Family History. Both parents are well—the father aged 34 years and mother 39 years. There are 5 siblings and all are well. There was no history of congenital malformations in near relatives.

Pregnancy and Delivery. Normal.

Condition at Birth. The infant appeared normal at birth and weighed 7 lb. He soon became cyanosed, however, and had to be kept in an oxygen tent for 2 days.

History of the Illness. The baby vomited liquor soon after birth. Thereafter he used to vomit 5 to 10 minutes after most of his feeds. The vomitus was at first small in quantity and consisted of milk only. Later it increased in amount and became bile-stained and for 2 weeks before admission is was profuse and, on occasions, definitely projectile.

He passed stools from the first day of life. These were apparently normal in quantity and colour. During the last 2 weeks the stools became more constipated and less frequent.

The infant was recognized as a mongol soon after birth. His tongue tended to protude and he did not cry for the first week of life. He failed to gain weight normally and during the last 2 weeks lost a good deal. Visible peristaltic waves were observed during the last 2 weeks.

Condition on Admission. The infant was small, emaciated and grossly dehydrated. Several of the external stigmata of mongolism were present (Fig. 1)—rounded head, oblique palpebral fissures, broad nasal bridge, medial epicanthic folds, crumpled ears and protruding tongue. The axial tri-radius was abnormal but the fingers were not stumpy and there was no incurving of the little finger. No cardiac abnormalities or any other congenital malformations were detected.

The abdomen was not distended but peristaltic waves were seen in the epigastrium and right hypochondrium passing from left to right and proximo-distally. The thickened, dilated duodenum was palpable.

Rectal examination revealed no abnormality. Gastric lavage produced a large residue of bile-stained altered milk.

A straight X-ray of the abdomen was inconclusive. Barium meal examination revealed a marked hold-up of the barium in the second part of the duodenum and gross gastric and duodenal dilatation but some barium passed on and was later seen in the colon (Fig. 2).

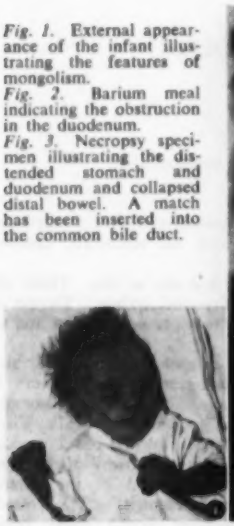
Progress. Vomiting continued and the child's condition deteriorated rapidly. Operative treatment was *not* undertaken. The infant died on 29 January 1952 at the age of 7½ weeks.

Necropsy Findings. The external features of mongolism were confirmed.

There was an obstruction of the duodenum in its second

part. The stomach and first part of the duodenum were grossly dilated and hypertrophied (Fig 3). The distal part of the duodenum, small bowel and colon were somewhat collapsed and contained bile-stained faecal material. After the duodenum had been opened it was found that the obstruction was due to gross narrowing of a short segment (5 mm.) of the duodenum *at* the site of entry of the bile duct. The diameter of the stenosed area was only 2 mm. and the biliary papilla was situated within it. No bile staining was noted proximal to the obstruction.

Fig. 1. External appearance of the infant illustrating the features of mongolism.
Fig. 2. Barium meal indicating the obstruction in the duodenum.
Fig. 3. Necropsy specimen illustrating the distended stomach and duodenum and collapsed distal bowel. A match has been inserted into the common bile duct.



The cerebellum was disproportionately small (weight of whole brain 325 gm. and weight of cerebellum and medulla 25 gm.). The heart was normal and no other congenital malformations were present.

DISCUSSION

This case presented the classical clinical features of severe duodenal stenosis in the newborn. These have been described elsewhere.[2] Attention is again drawn to the fact that these babies may pass normal stools and often do not develop abdominal distension. The condition may be confused with pyloric stenosis, since the vomiting is often projectile, but the presence of bile in the vomitus should give a clue to the diagnosis. Indeed, the sinister significance of bile-stained vomiting in a newborn infant cannot be overemphasized.

The features of mongolism in the newborn were well illustrated by this case. These features are often not very obvious and are perhaps not sufficiently widely appreciated. They have been adequately described by Carter and McCarthy[3] and reiterated by Bodian *et al.*[1]

The frequent occurrence of mongolism in newborn infants suffering from intrinsic duodenal obstruction has already been referred to. In their recent paper, Bodian *et al*[1] point out the remarkable fact that during 1951, after their attention had been drawn to the association, all 5 cases of duodenal atresia admitted to the Great Ormond Street Hospital were found to be mongols. All these cases were seen by the author and it is indeed remarkable that the present case was the next consecutive case of intrinsic duodenal obstruction seen by him. Moreover, 2 of the 5 cases referred to above were not recognized as mongols until post-mortem examination. Lanman[4] of Boston reported that of 17 children with duodenal atresia successfully treated by operation no less than 4 were *subsequently* recognized as mongols. It is, therefore reiterated that all infants with suspected duodenal obstruction should be carefully examined for the stigmata of mongolism before a decision to operate is made.

I wish to thank Dr. Wolf Rabkin, Head of the Department of Paediatrics at Groote Schuur Hospital, for asking me to see the case in consultation and for his permission to publish the case.

I am indebted to Messrs. MacManus and Todd for the photographs.

The necropsy was done by Dr. MacPherson of the Department of Pathology, University of Cape Town, and I am grateful to him for his co-operation.

The work done overseas by the author was aided by a Nuffield Dominion Travelling Fellowship.

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VAN DIE REDAKSIE

ISONIKOTIENSUUR-DERIVATE EN TERINGKIEM WEERSTAND

Op 26 April 1952 het een van die sprekers by 'n Kongres van die Vereniging van Switserse Tuberkulose Spesialiteite wat in Lausanne gehou is, verslag gelewer oor 'n ras teringkiem wat na 14 dae 'n duidelike weerstandstoename tot 'n isonikotiensuurpreparaat ontwikkel het. Verskeie ander gevalle van betreklik vermeerderde weerstand is ook in Amerika aangemeld.

Die ontwikkeling van 'n weerstandstoename van die teringkiem teen chemoterapeutiese of antibiotiese middels is nie verbasend nie, en kon byna verwag word van hierdie nuwe geneesmiddel. Dis waarskynlik dat onvoldoende of onreëlmatige dosisse baie dikwels verantwoordelik is vir die ontwikkeling van weerstand teen geneesmiddels. Dit is dus belangrik om die bakterieë sover moontlik met onmiddellike en intensiewe toediening van die terapeutiese middel te vernietig, om die moontlikheid van die verskyning van 'n weerstandsorganisme te voorkom.

Om die toestand wat ontstaan het in verband met weerstand teen isonikotiensuur-derivate die hoof te bied, het sommige van die vervaardigers van hierdie middels besluit om 'n vermeerdering tot byna dubbel die vorige gemiddelde daaglikse dosis aan te beveel.

Hulle meen dat die verdubbeling van die dosis geregverdig is, want hulle beweer dat later ondervinding nie die aanvanklike verslae uit Amerika oor ongewenste bygevolge te wyte aan die middel onderskryf nie, en dat die toediening van die geneesmiddel terapeuties heeltemal draaglik is.

Die posisie is klaarblyklik moeilik en ingewikkeld. Elke individuele geval sal as 'n spesiale probleem behandel moet word, want geen eenvormige reël kan vooruit bepaal word nie. Met ons huidige kennis is dit onmoontlik om die moontlikhede van ongewenste langtermyn komplikasies wat hierdie nuwe geneesmiddels kan veroorsaak, uit te skakel.

Dit word aangeneem dat ontoereikende behandeling gevaarliker mag wees as geen behandeling nie, maar die verleentheid waarin ons mag beland beklemtoon die noodsaaklikheid om voldoende en goed beheerde data in te samel voor ons vaste besluite oor hierdie belangrike saak kan neem.

SNYKUNDE EN KORTISOON

In 'n onlangse uitgawe van die *Journal of the American Medical Association* [1] het 'n hoofartikel aandag gewy aan die nuwe gevare wat geskep word vir die chirurg wat

1. Hoofartikel (1952): J. Amer. Med. Assoc., **148**, 1422.

EDITORIAL

ISONICOTINIC ACID DERIVATIVES AND TUBERCLE RESISTANCE

On 26 April 1952, at a Congress of the Society of Swiss Tuberculosis Specialists held at Lausanne, one of the speakers reported on a strain of tubercle bacillus which developed a distinct increase in resistance to an isonicotinic acid preparation after 14 days. Several other cases of relatively increased resistance have also been reported in America.

The development of an increase in resistance of the bacillus of tuberculosis to chemotherapeutic or antibiotic agents is not surprising, and was almost to be expected in the case of this new drug. It is likely that inadequate or ineffectively distributed dosage is most often responsible for the development of drug resistance. It is important, therefore, to destroy the bacteria, as far as it is possible to do so, by an initial massive administration of the therapeutic agent, to prevent the possibility of the appearance of a drug-resistant organism.

To meet the situation that has arisen in connexion with resistance to isonicotinic acid derivatives, some manufacturers of these drugs have decided to recommend an increase to almost double the average daily dose heretofore suggested.

It is felt that the doubling of the dosage is justified because it is maintained that later experience has failed to substantiate the initial reports from America about undesirable side-effects due to the drug and that, in therapeutic doses, the drug administration is well tolerated.

The position is obviously a difficult and intricate one. Each individual case will have to be dealt with as a special problem, as no uniform rule of thumb can yet be laid down in advance. It is impossible, in our present state of knowledge, to exclude the possibilities of undesirable long-term complications which these new drugs may produce.

It is recognized that inadequate treatment may be more dangerous than no treatment at all, but the dilemma in which we may find ourselves emphasizes the need to gather adequate and well-controlled data before reliable decisions about this important matter can be made.

SURGERY AND CORTISONE

In a recent issue of the *Journal of the American Medical Association* [1] an Editorial drew attention to the new risks created for the surgeon operating on a patient in whom

1. Editorial (1952): J. Amer. Med. Assoc., **148**, 1422.

opereer op 'n pasiënt by wie kortisoonbehandeling 'n onvoldoende hoeveelheid van die bynierskors veroorsaak het.

In werklikheid kan gedeeltelike uittering van die skors van die bynierklier ontstaan na langdurige behandeling met Kortisoon. Hierdie reaksie is nie enig in die geval van die bynier nie; dit is 'n bekende beginsel wat ook op ander buislose kliere van toepassing is. Dis egter in verband met die byniere wat 'n kritieke toestand, veral in die geval van 'n noodoperasie, mag ontwikkel.

Verdowing en chirurgie skep by tye strawwe en ernstige stremmings wanneer die skors-steroïde belangrik is vir die voorkoming van skok en ineenstorting van sirkulasie.

Die toediening van Kortisoon voor die operasie sal hierdie gevaar vir die chirurg en die pasiënt uitskakel. As die pasiënt egter 'n reeks Kortisoonbehandelings ontvang het, sal dit in 'n noodtoestand nodig wees om gebruik te maak van die spoediger waterige preparate van ekstrakte van die bynierskors, binne-aars toegedien, om die stadiger skors-steroïde aan te vul. Op hierdie wyse kan 'n pasiënt veilig deur 'n gevaarlike tydperk van stremming gehelp word sonder dat sy kanse op oorlewing verminder is.

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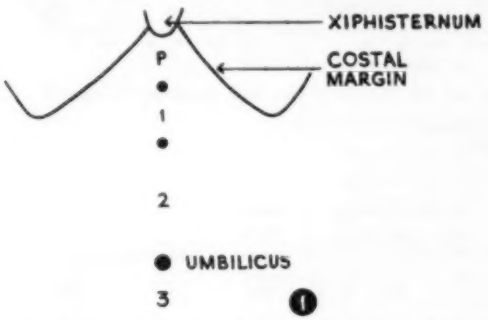

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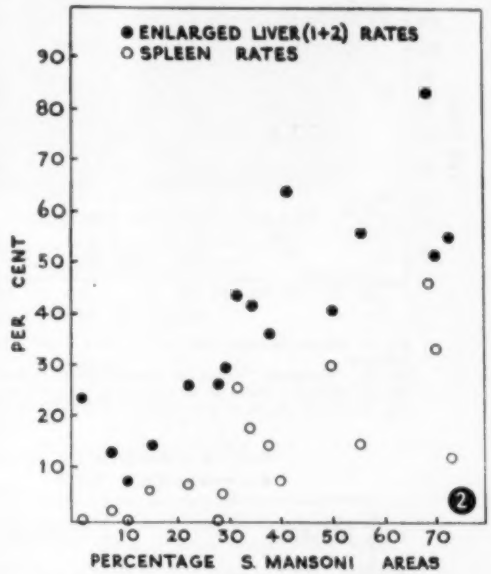

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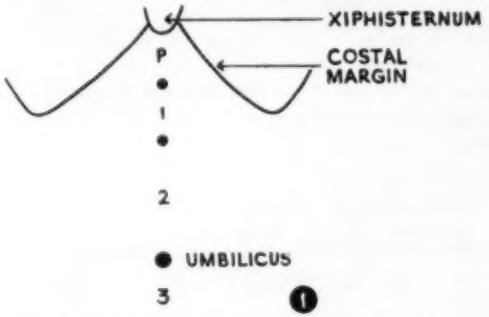

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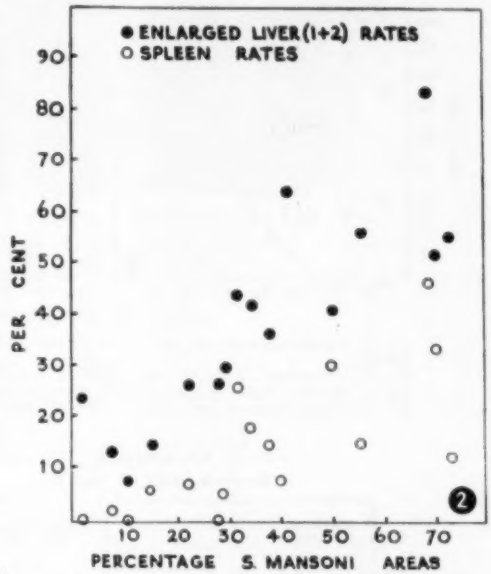

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The intensity of *S. mansoni* infestation is however not dependent upon either the age of the group or upon the sex of the group examined in this sample.

That the enlarged liver rate is dependent upon age is also shown by the drop in '2' livers from 18% (243 cases) and spleen rates as far as malaria is concerned; as far as malnutrition is concerned, there seems no reason to suppose that the diet of the Natives under consideration should vary to such a great extent in such a small area to account for the vast differences observed in enlarged

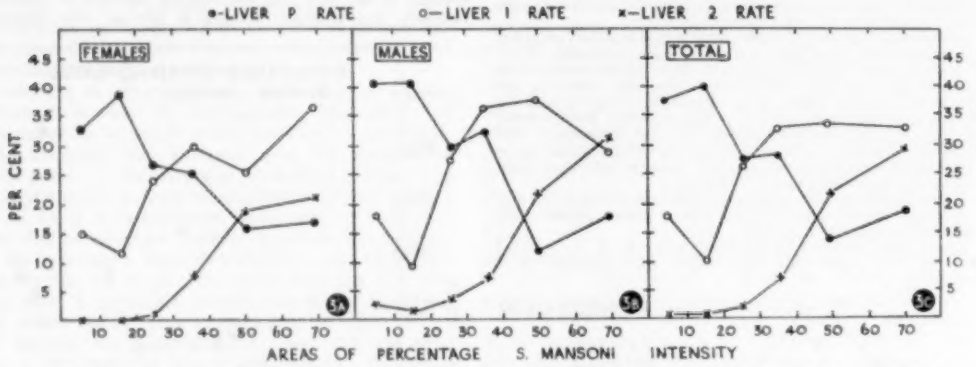


Fig. 3. Graphs showing the rise of livers 1 and 2 rates and fall in liver P rate with increasing *S. mansoni* intensity.
Fig. 3a (*Females*). Areas of percentage *S. mansoni* intensity.
Fig 3b (*Males*). Areas of percentage *S. mansoni* intensity.
Fig. 3c (*Total*). Areas of percentage *S. mansoni* intensity.

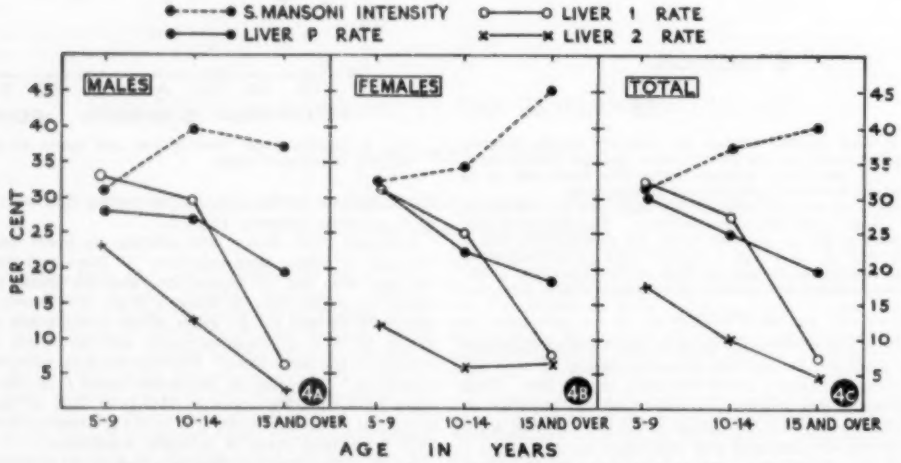
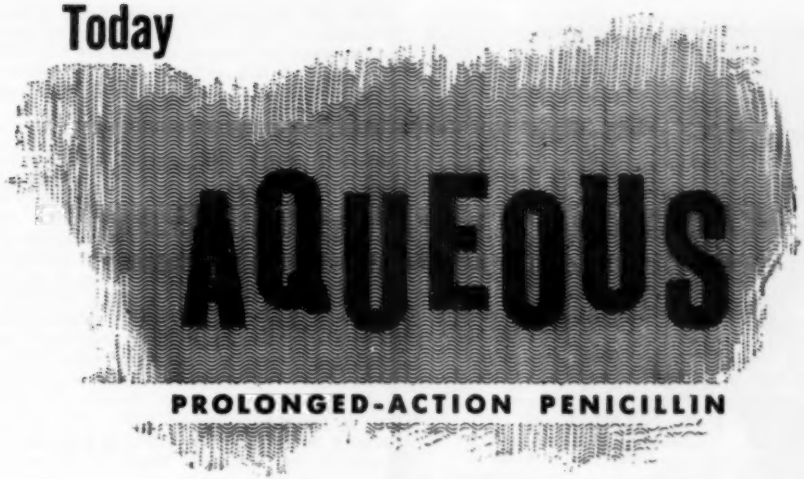


Fig. 4. Graphs showing fall in all liver rates and rise in *S. mansoni* intensity with increasing age.

in the age group 5-9 years to 10.1% (435 cases) in the age group 10-14 years; and to 5% (99 cases) in the age group 15 years and over: all these decreases are significant (Fig. 4c).

That the enlarged liver rates are due to *S. mansoni* infestation and not to malaria and malnutrition is evident from the size of the livers and the non-correlation of liver liver rates. Clinically, too, the children manifested the same degrees of malnutrition throughout the area. Hypochromotrichia and mild degrees of xerosis were common throughout the area. Very early thin skin atrophy was common, often in places where the *S. mansoni* rate was low. Bleeding gums were generally common. Other signs such as angular stomatitis, Bitot's



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spots, etc., were not observed or occurred very rarely. Meat consumption and weaning times were not gone into but the habits of a tribe in one area do not vary greatly, unless the terrain in which they live, and therefore their food supply, varies.

AREAS IN DETAIL

1. *Areas of High Infestation.* All places with high infestation intensities, i.e. 50% or higher (with the one exception of Guernsey) are situated in the Kaap Crocodile River valley. This low-lying valley is watered throughout the year by the 2 large rivers. It is highly canalized almost throughout, has innumerable small dams and the snail population is dense, consisting chiefly of *Lymnaea natalensis, Planorbis pfeifferi* and *Physopsis africana,* all in about equal numbers. The snails are most numerous in the canals, dams and small spruits; the latter tend to pool in the dry season. In altitude it varies from about 600 feet above sea level at Komatipoort to roughly 2,000 feet at Eureka and Honeybird. Guernsey, the one place outside the area with a high infestation intensity, is also highly canalized, has numerous small dams and a dense snail population of *Lymnaea natalensis* and *Planorbis pfeifferi.* It is about 1,500 feet above sea level.

2. *Native Reserve Areas*: (a) *Mzinti, Shongwe, Cunningmoore, and Malamule.* These areas, though widely separated, are all comparable. Their *S. mansoni* intensities range from 28% to 38.8%. There are no canals in the areas. The water supply is largely derived from rivers which pool up in the dry season. The snail population is dense consisting of *Lymnaea natalensis* and *Planorbis pfeifferi. Physopsis africana* is not common except at isolated points.

(b) *St. Peters, Gutchwa and Makoko.* These areas are also comparable. Their *S. mansoni* intensities range from 7% to 14.8%, and there are no canals in the area, the water supply being entirely from rivers which pool up in the dry season, and dams. The snail population is dense but, unlike the preceding areas, there are only isolated pockets of *Planorbis pfeifferi,* and the *Lymnaea natalensis* and *Physopsis africana* populations are dense throughout.

3. *Urban Areas*: There are 4 urban areas to be considered.

(a) *Nelspruit and Barberton.* These 2 areas have comparable rates of 21% and 27.6%. Both areas are moderately canalized and low lying, 2,000 to 2,500 feet above sea level. Their snail population is moderate to small with equal numbers of *Lymnaea natalensis, Planorbis pfeifferi* and *Physopsis africana.*

(b) *White River.* Intensity 2.3%. This area is higher in altitude than all other areas, 3,000 to 3,500 feet above sea level. It is highly canalized with a dense *Physopsis africana* population, moderate *Limnaea natalensis* and very few, if any, *Planorbis pfeifferi.*

All 3 of the above areas deal with a highly urbanized Native population.

(c) *Komatipoort.* This area has already been included under areas of high infestation. In contrast to the other urban areas, however, its school children are largely drawn from the neighbouring farming area and from the adjoining Native Reserve area.

4. *Other Areas*: (a) *Driehoek.* Intensity 2.3%. It is low lying, not canalized and the total snail population is minimal.

(b) *Mataffin.* Intensity 40%. It is low lying, very highly canalized with a dense total snail population of *Physopsis Planorbis* and *Lymnaea.* The Native population is, however, migrant, and it was found that those children (27) living there longer than 6 months had an intensity rate of 48% while those (13) there for less than 3 months had an intensity rate of 23%. The numbers are, however, too small for any conclusions to be drawn, but it may well be that Mataffin would fall into the high-infestation areas if a selected sample of long-resident Native school children were taken.

Factors Appearing to Affect S. mansoni *Intensity of an Area*: 1. *European Farming.* All European farming areas with the exception of Driehoek, are highly canalized and have a dense total snail population. Their intensity rates are high, ranging from 40% to 73%.

2. *Rural State of the Native.* None of the Native Reserve areas surveyed have any canals. Their snail population is dense to moderate and they have a moderate to low *S. mansoni* intensity rate.

3. *Urbanization of Natives.* The intensity rates here are low or moderate, but it seems more likely that this is due to other factors than that the majority of the children live in towns.

4. *Water Supply.* An abundance of water from any source does not affect the *S. mansoni* intensity without taking in consideration the snail population of those waters. A poor water supply, on the other hand, e.g. Tenbosch, which has one little spruit, with a dense total snail population, does seem to affect the *S. mansoni intensity.*

5. *Snail Population.* A dense snail population of *Planorbis* snails seems to be essential for a high *S. mansoni intensity,* as absence of it only occurs in places where the intensity is low.

A combination of factors therefore seems to be necessary for the high *S. mansoni* intensities found. These factors are:

(a) Presence of *Planorbis* snails in large numbers.
(b) Country with canalized waterways and dams, or country where there is a limit to the amount of water available.
(c) Altitude may be another, but as only one place in the area surveyed has an altitude of over 3,000 feet above sea level, it has not been used for comparative purposes.

DISCUSSION

Intestinal bilharziasis, both that caused by *S. mansoni* and that caused by *S. japonicum,* has long been known to cause gross pathological lesions of the liver and spleen. A correlation between enlarged livers and *S. mansoni,* as far as is known, has not so far been attempted in the same way as spleen rates and sizes and malaria. It does, however, seem possible that an enlarged liver rate, amongst children, in any area could be of value in assessing the intensity of *S. mansoni* infestation of that area, other causes of mass hepatomegaly being equal. In the present area, as has been said, the over-all malnutritional picture is the same. The over-all diet is somewhat increased in some schools by one meal a day, but this seems to have no effect on the liver rates, e.g. Komatipoort (70.4%, *S. mansoni*; liver rate, 46.8%) has school feeding while Eureka (73.4% *S. mansoni*; liver rate, 52.3%) has no school feeding.

There are some obvious 'misfits', notably Kaapmuiden and White River, which both have liver rates very much higher than those of other places with the same *S. mansoni* intensity. This might well be due to the age distribution of the children; 39 of 66 children (or 59%) at White River and 32 out of 43 children (or 74%) at Kaapmuiden were in the age group 5-9, whereas at other schools the percentage of the 5-9 age group was in the region of 20-25%. That the 'misfits' are not entirely due to the age distribution is shown by Gutchwa (liver rate, 6%; *S. mansoni* intensity, 10%); 48% of the 31 children were age group 5-9 years. Unfortunately individual school figures are too small for any conclusions to be drawn. This might also be a reason for 'misfits'.

Urinary bilharziasis, from records of this office, is highly endemic throughout the area and there is no suspicion that it causes hepatomegaly amongst the school children. It is known, e.g. that the urinary bilharziasis rate of Makoko and Gutchwa, amongst the school children, is 81% and 76% respectively; yet the enlarged liver rates are 12% and 4% and *S. mansoni* intensities 7% and 10%. Komatipoort, on the other hand, with a *S. mansoni* intensity of 70% and *S. heamatobrium* rate of only 49%, has an enlarged liver rate of 46.8%. Other examples could be given.

The reason why *S. mansoni* intensity is high in highly canalized areas is not understood, but it might be due to the numerous 'pockets', in the form of dams, which continuously collect and concentrate snails coming into them from the large rivers via the canals. These pockets are mostly all overgrown with reeds and grasses and could act as an ideal breeding ground for snails with very little chance of their being washed out. In addition, children and adults swim, catch fish and herd ducks in the dams. They seldom wash in them, however, this usually being done in the large rivers and spruits, Europeans objecting to soap in their dams.

Native sanitary and washing conditions throughout the rural areas are minimal and pollution of waters is, as a result, maximal. The same conditions in the urban areas are somewhat better, but still not in any state to cause any lessening of the risks of infection or pollution.

CONCLUSIONS AND SUMMARY

1. A *S. mansoni* survey was done together with liver and spleen rates on 819 Native school children in the low veld of the Eastern Transvaal.

2. No difference was observed with regard to the observations on the two sexes.

3. There is a definite correlation between the *S. mansoni* intensities found and the liver rates, and it seems reasonable to suppose that in places where the *S. mansoni* intensity is high, and therefore where the individual infestation is heavy, considerable liver damage is being caused amongst the Native population.

4. Certain common factors were observed which might have some bearing on the degree of intensity of the disease in any one particular area.

Thanks are due to Dr. D. H. S. Annecke, Deputy Chief Health Officer, Northern Transvaal, for criticisms and encouragement and for permission to publish this paper.

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A BACKGROUND TO INDUSTRIAL HEALTH

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Charles Lamb's epithet would have been stronger when he apostrophized the Sabbathless Satan 'who first invented work' had he been able to foresee the vast extension of organized group work and social ant-heaping to which the Industrial Revolution would lead; and contemporary officialdom, looking back to 1939, must find much to wonder at in the current South African scene; for in that year we find the following passage in the Union *Year Book*: 'Apart from those associated with gold mining on the Witwatersrand, industrial hygiene problems can hardly be considered to have arisen in South Africa.'

Fig. 1 illustrates the increase of persons employed in manufacturing industry since 1904 and shows South Africa's progressive industrialization.

Examination of population data provides further matter of interest. While the European population increased by 112% in the years 1904-1946, the increase of industrial employment among Europeans in the same period was 490%; similarly among non-Europeans the total population gain (about 123%) was greatly exceeded by the increase in their employment in factories (about 508%). As industry is primarily an urban development, it can confidently be predicted that the 1951 census will show a further progression in the rapid urbanization of South Africans.

These processes are producing unique health and social problems, since our people have little sophistication and 'know-how' of urban life. For a large proportion of our labour force the realities are not the appurtenances of urban living and earning, but are spells, bewitchment and sorcery. Our multi-racial social structure is preserved in industry; bent to the same task one may find animist and rationalist, monotheist and polytheist. Foreign example and precept will help us in the technology of our industry, but for its economic humanization we must look to ourselves.

During the 2½ years I have had the honour to have charge of the Industrial Health Centre (an integral unit of the Union Health Department's Institute of Family and Community Health) I have examined in a working situation some of the medical and health problems affecting management and labour to-day. This has been made possible by the kindness and courtesy of 4 Durban factory operators who made available to the Institute their

premises, work-people and time; and by the workmen who submitted themselves to clinical examination.

Our first step was to ascertain by clinical examination of workmen the disease load carried by these factories in their daily operations, and to consider what effect the

offloading of disease had on attendance at work and thereby absentee rates. Some of the facts observed are recorded in this paper. Workmen in the factories were offered a clinical examination which included a nutritional assessment and laboratory testing of urine, stool and blood ('periodic health examination' at this Institute and in the English literature; the 'health inventory' of American medical publicists). By the end of June 1951, 1,167 men (290 Europeans, 823 Natives and 54 Indians) had been examined.

A catalogue of the abnormal findings made at these examinations would be both extensive and wearisome; but a selection of data presenting the incidence of preventable disease is readily assimilable (Table I).

Any set of figures derives its significance from its locale: a morgue report containing a lot about death need not cause alarm; and from a list of causes for admission to hospital one might expect something like the above; that,

TABLE I

	Percentage Incidence in		
	Europeans	*Indians*	*Natives*
Stigmata of malnutrition (all types)	51·8	89·1	99·3
Round worm infection	5·4	27·3	42·7
Tape worm infection	4·5	—	21·8
Amoebic dysentery (including hepatitis)	1·2	4·5	13·1
Pulmonary tuberculosis	1·4	—	2·0
Bilharzia	1·2	12·5	18·5
Syphilis (all types)	2·7	6·9	19·1
Gonorrhoea (acute and chronic)	0·6	0·6	17·7

however, this was found in the workaday world of industrial employment is wholly bizarre, and is the more serious as a small abstract from a lengthy list of findings. Factories are not conducted with that air of tender solicitude usual in the treatment of sickness. These findings illuminate the past and darken the future and are potent factors to deplete our whole economy, to depress efficiency and output and to lower morale and impair labour relations.

The procedure adopted to secure the offloading of this disease load varied in the different race groups. European workmen were assumed to be economically and intellectually equipped to seek medical aid when required, and they have therefore been referred to their own medical attendants for treatment. No such assumption has been possible in the case of the Natives; e.g. scrutiny of the case records of the last 100 Natives I examined at one factory shows their previous attendants in illness to have been:

24%—No attendant.
10%—Went to private practitioners.
41%—Went to Isinyanga.
25%—Went to the Provincial hospital.

For a large proportion of Native workmen we have been their first contact with Western medicine—they have still to be conditioned to an acceptance of scientific doctoring. It has been considered unlikely that the average Native workman would take steps to remedy ailments of which he was not aware or which he tolerated. A full-at-work therapeutic service (excepting only the treatment of injuries received at work: provision for such treatment existing under the Workmen's Compensation Act) has therefore been provided for Natives additional to the personal health examination and diagnostic service provided for them and for Europeans. The provision of services in varying degree to these 2 race groups has produced interesting differences in daily sick absences.

The vital statistics of factory life are absentee and associated rates, and we have used absence from work as a guide to the possible utility of the procedures I have described. In one factory (employing about 100 European and 200 Native workmen) measurement was made of the crude absentee rates for a year before the introduction of the Health Centre service. These rates, and those obtained in a subsequent year with the service, are shown in Table II.

TABLE II

	Crude Daily Absentee Rates for One Year	
	Before the Health Service	*During the Health Service*
	%	%
Europeans	7·16	4·30
Natives	5·78	3·58

To assert without examination of other variables that the health service was the only cause for these reductions would be credulous vanity. As, however, its existence was a major difference in employment conditions in these 2 years these figures do indicate that such a service can play a big role in the reduction of absenteeism.

There are 3 sets of figures in Table II, relating 3 different sets of circumstances:

i. Crude absentee rates without a health or medical service (Europeans 7.16% and Natives 5.78% per day).
ii. A crude absentee rate observed with a personal health service only (Europeans, Column 2, 4.3% per day).
iii. A crude absentee rate observed with a combined health and therapeutic service (Natives, Column 2, 3.58% per day).

Sick absence rates observed take these matters a stage further and further point the moral. Table III illustrates these rates, their proportion to total absenteeism and the differing loads in clinic attendances the different types of services caused.

TABLE III

	Daily Sick Absentee Rate	*Percentage of Total Absences*	*Daily Attendance Rates at Clinics*
	%	%	%
Europeans ..	2·04	44	3·13
Natives ..	1·42	30	6·55

It is apparent from this table that Natives have enjoyed a considerable advantage in having treatment for their ailments 'on the job'. Despite their greater disease load their daily sick absenteeism is 30% below the European figure (the difference in their daily sick rates being 0.62%, i.e. 2.04 less 1.42). That there is a cost for this reduction is also apparent: to the companies it has lain in extra clinical attendances in factory-paid time, the daily clinic attendance rate for Natives being slightly more than twice the European rate. Immeasurably more costly to companies, though, is the whole-day absence from work of skilled European workmen. Absences cause in factory disorganization a cost rise disproportionately greater than their incidence in the working population. It should be remembered that, for a European workman to seek medical attention, time off work is necessary, should he elect to attend either the public hospital or a private practitioner. After-work surgeries in the English pattern are not a feature of South African medical practice. As these men are paid by the hour, there is an understandable reluctance to seek aid except in acute illness: taking time off costs a man his doctor's fees and his pay, and a position is thus created in which the anxiety of debt is added to that of illness. These sick rates confirm the clinical findings showing the load sickness lays on the industrial community.

A most important point bearing on the utility of health and medical services in industry emerges from consideration of the clinic attendance figures: they illustrate the continuous nature of medical care required. It is not possible to attain a high level of fitness in a factory unless relative stability of labour is attained; unless, in fact, both employment and health care are continuous. Mobility in the labour forces observed by me has been great. Average labour turnover rates per annum are about 500 per 1,000 employees for both Europeans and Natives. This means that of 1,000 men on a firm's books at the beginning of the year only 500 remain in employment at the year's end. Wastage reveals itself to be exceptionally high in new employees and very high labour turnover rates are found in this category.

While the wasted and unused skills and knowledge implicit in this mobility is an unjustifiable levy on our industrial costs, it is also an effective barrier to the attainment of a high degree of industrial health. Given a stable labour force, personal health services can and should play a major role in the effective development of South African industry. Health services will undoubtedly help in the attainment of stability but, to be maximally effective, should be framed within the wider approach now known as 'personnel management'.

In our industries our health and medical services play only an incidental part. Generally, our attitude to the changes occurring is sequential and therapeutic rather than imaginative and preventive. Sick Benefit Societies and Medical Aid Societies hold pride of place. The unusual problems we face in our rapid industrialization present a stimulating challenge urgently affecting the organization and utility of our medical practice—a challenge possibly not recognized by industrialists or labour, but one which the medical profession, posessing a vast reservoir of knowledge and skill not yet consciously directed to the industrial field, can most profitably meet to the great benefit of both our industry and our people. Economically we stand in the shoes of Sir Thomas Browne when he said: 'Let me be sick myself, if sometimes the malady of my patient be not a disease unto me.'

My thanks are due to the Secretary for Health for permission to publish this paper; to the industries and workpeople who by their public interest made this work possible; and to my colleagues on the staff of the Institute who participated in this work and leavened it with their advice and criticism.

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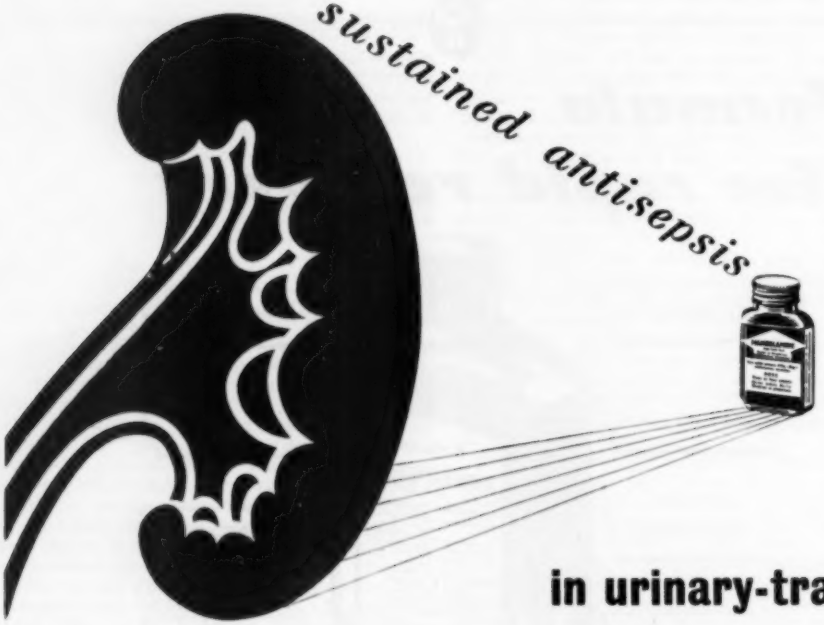

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exposure, the upper palpebral conjunctiva became dry and thickened. There was considerable scar tissue running the length of the upper lid, but fortunately this was mostly superficial.

Fig. 1 shows the appearance of the case. When first seen, uncorrected VR was 6/36 and VL 6/9; the cornea was quite clear except for a small central nebula. The fundus was normal. Physical examination and the Wassermann reaction were negative.

There are two lines of approach to the repair of this defect; we can employ a sliding flap or a tubed pedicle flap. The latter can be taken from a contiguous area, e.g. the forehead, such as Gabarro's operation in the lower lid, or in the so-called Italian method from the anterior surface of the forearm by means of a plaster cast to hold the arm in position while the transplanted flap is taking. Snydacker used a large pedicle flap. Modifications have been introduced by Moray, Delmora and Fulcher, using the skin of the neck. Esser, for a similar case, has used an Ollier-Thiersch Graft (Esser's inlay). The objection to this type of repair is that the amount of contraction occurring in the graft cannot be estimated correctly and the risk of 'non-take' is high. Full thickness grafts have also been used (Wolfe grafts).

Because of the greater certainty about blood supply and because of the ample skin available, it was decided to employ a tubed pedicle graft to cover the area of skin defect which would result from excision of the scar tissue.

Stage 1. In the first operation a full thickness tube of skin (7 cm. long) was made in the right forehead area. The tube had to be made somewhat higher than was desirable because of previous scars on the forehead; but it was considered that this would have the advantage of being hidden more easily by the scalp hair. In two weeks the tube was healthy and well nourished (Fig. 2).

Stage 2. Three weeks after the first operation the base of the tube was incised, the tube opened and surplus fat removed. The scar tissue of the upper lid was excised and two small tarsorrhaphies performed. The donor skin flap was now brought across and sutured (without pressure) to cover the area of skin defect. The lids apposed very satisfactorily and there was no tension on the tissues.

Ten days later the stitches were removed (Fig. 3). The graft had taken well and was healthy. The lid was, however, somewhat swollen.

Stage 3. The base of the pedicle was now removed and the graft trimmed to give the lid its proper contour. The final result when the swelling had subsided, was most satisfactory. The eye was completely covered by the lids when closed, with the lids in apposition, and there was full movement in opening them. On discharge VR was 6/36, VL 6/9; with correction VR was 6/18 and VL 6/6. The defect of vision in the right eye was attributed to the small central nebula which may have anteceded his accident or may have arisen from an exposure keratitis which had healed before admission.

SUMMARY

1. A case of complete cicatricial ectropion of the right upper lid is described. Repair by means of a tubular pedicle graft was performed.

2. It is stressed that careless repair of wounds in the neighbourhood of the orbit leads to considerable disability and requires ingenuity and patience in order to obtain good function again.

We wish to thank Mr. P. N. Lloyd for his excellent photographs.

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ASSOCIATION NEWS : VERENIGINGSNUUS

QUEENSTOWN DIVISION: MEETING HELD ON 16 MAY 1952

Present. Drs. Botha, de Villiers, Farrell, Holmes, Moss, Schmaman, Stern, Vellama, J. van Schalkwyk, M. van Schalkwyk, van Rensburg and Wolpowitz.

Chairman. In the temporary absence of the Chairman, Dr. Wolpowitz, the President-Elect, was invited to take the Chair. He welcomed to the meeting Dr. Farrell, recently come to Queenstown; Dr. van Rensburg from Indwe; Dr. Moss, Dr. Vellama recently returned from Cape Town, after a major operation and on recuperative leave; and lastly the interns, Drs. de Villiers and Schmaman.

Apologies for absence were accepted from Drs. Wright, Schaffer, Simonsz, Schweitzer and Rosin.

Members were informed that Miss Armstrong would shortly be leaving for the Groote Schuur Hospital, Cape Town.

Medical Practice in Urban Native Locations. A letter was read from the Secretary for Native Affairs. A discussion followed. Dr. Farrell pointed out that the matter did not affect the practitioners of Queenstown. The Secretary stated that we should give our views on the principle involved. It was finally resolved unanimously that 'the matter remain as at present under Government policy and the Native Urban Areas Act'.

Important Announcement. The attention of members was drawn to the announcement in the *Journal* of 17 May *re Unapproved Medical Aid Societies and Tariff of Fees.*

Copies of an *amended scale of fees* drawn up by the East London Division were handed to the members present. Dr. Farrell said that this tariff could only be used as a guide to us. Dr. Vellama agreed and pointed out that fees for Natives in this area were quite different, in which case we should lay down our *own* scale of charges and so prevent the Native from going the rounds from one doctor to another and, as it were, calling for tenders. He considered the general anaesthesia fee should be £2 2s. Dr. van Schalkwyk informed the meeting that at a previous meeting it was agreed 'that the East London tariff of fees be adopted'.

New Member. Dr. H. I. J. van Rensburg.

Finance. The Secretary-Treasurer stated that there was still an amount of £11 17s. 3d. required to pay all the accounts of the Medical Dinner. The members present kindly liquidated this amount.

General. Dr. Farrell suggested that meetings be more frequent. The Secretary said that meetings were usually held quarterly, and apologized that this was only the second meeting held this year, owing to the absence from Queenstown of first the President and then the Secretary. She agreed that a meeting could be arranged at any time if a member wished or if there were clinical cases to be shown.

Dr. Botha spoke on the method of presentation of the clinical cases. Dr. Vellama wished the surgeon in charge of the case to give authoritative information on the cases shown. Dr. J. van Schalkwyk explained that in the past the intern informed the physician or surgeon of a case and obtained permission to show the case. The intern then wrote up the case and arranged for the patient to be at the meeting, where he read the clinical notes and gave all details. Members were then invited to discuss, diagnose and prognose the case. Dr. van Schalkwyk thought this method was very satisfactory.

Tea was served and the meeting closed at 9.30 p.m.

IN MEMORIAM

DR. MAURICE GREY PEARSON, *O.B.E.* (MILITARY), M.B., B.SC., F.R.C.S. (ENG.)

The death on 13 May of Dr. Maurice Pearson removes from our midst one of the most illustrious of our members.

Dr. Pearson was born in England in 1872 and received his medical education at St. Bartholomew's Hospital, London, where he graduated with honours—winning the Harvey prize.

After serving as House Surgeon, and also as Ophthalmic House Surgeon at St. Bartholomew's, he obtained the F.R.C.S. (Eng.) and migrated to South Africa in 1900, settling in Alicedale, C.P., where he was District Surgeon and Railway Medical Officer.

In 1902 Dr. Pearson joined Dr. W. Addison in Durban, and remained in active practice until 1936, carrying on a large general practice with an active surgical slant. This included ophthalmology, until the advent of the specialist opthalmologist, after which he concentrated on general surgery. His practice of surgery dated before motor-cars, when he drove a magnificent horse and trap.' Dr. Pearson saw military service in the Zulu Rebellion. In World War I he was in charge of a surgical team in South West Africa, and when that campaign was over, he took charge of the Surgical Division of the South African Military Hospital Unit which was due to go overseas. Later Dr. Pearson was transferred with a section of this Hospital to Abbéville in France. While in France he was appalled at the high mortality from compound fractures of the femur. With characteristic thoroughness and determination he set about devising ways and means of dealing with this wide-spread problem. He worked under the most adverse conditions, and evolved a method of transportation and treatment of fractured femur which made his name well known throughout the Commonwealth, England and America. His work was acclaimed on all sides and for this he was mentioned in dispatches, awarded the *O.B.E.* (Military Division) and promoted to Brevet Lieutenant-Colonel.

Dr. Pearson urged that cases of fractured femur be transported to England as early as possible, that they should be concentrated in hospitals and treated by teams which specialized in this type of work. His great friends, Sir Robert Jones and Sir Anthony Bowlby, consulting surgeons to the British Army in France, arranged this, and one of these 'Femur Hospitals' of 1,000 beds was opened at Edmonton, North London, with Dr. Maurice Pearson in charge. The magnificent results obtained were a revelation, and compared very favourably with those of modern orthopaedic surgeons. This hospital was a Mecca of surgeons of all the Armed Forces, including Americans. It is of interest that a recent American textbook of surgery gives in detail the methods Dr. Pearson used.

After the war Dr. Pearson returned to Durban to resume practice, which rapidly became more than he could manage. He took the late Dr. A. D. Edington into partnership and later his son Lawrence joined him. Dr. Pearson retired in 1936, but in 1940 again joined the partnership (without remuneration), to enable his son to join the S.A.M.C. in World War II. Dr. Maurice Pearson took on part-time military duties, and was Lieutenant-Colonel in charge of auxiliary hospitals in the Durban area.

He was a past President of the Natal Coastal Branch of the Medical Association of South Africa, and past President of the South African Medical Congress held in Durban. He was the most senior officer and a past Colonel of the 1st Field Ambulance, S.A.M.C., in Durban. Dr. Pearson was Senior Visiting Surgeon at the Addington Hospital from 1927–1936. It was during this time that I had the unique privilege of being associated with him as his anaesthetist. He was a man of exceptional energy and enthusiasm, and always courteous. Dr. Pearson possessed all the qualities most cherished in a doctor—personal charm, gentle manners, transparent honesty, great courage and a constant high standard of work.

When Dr. Pearson retired in 1936 he was appointed Consulting Surgeon to Addington Hospital, a post which he occupied until he died.

During Dr. Pearson's earlier years he developed an aptitude for photography, later for cinematography, and was a member of the Durban Cine Club. He was a past Chairman of the Natal Cripple Care Association, and a past Chairman of the Natal Radium Trust Fund—a fund which he helped to organize, and for which he raised a considerable amount of money.

Dr. Pearson's interests were varied and many, and he loved his garden. He specialized in orchids for many years, and presented his collection to the Botanical Gardens.

He read widely and could converse and speak well on a variety of subjects. Dr. Pearson was noted for his integrity, a wonderful capacity for friendship and kindness, often providing shelter for human derelicts. It is safe to say he had no enemies and was much loved by his patients and professional colleagues.

Dr. Pearson died as he would have wished, suddenly, in his lovely home, which he designed, built and loved so well. He married Miss Agnes Hunter, a nurse at St. Bartholomew's Hospital by whom he had one son. His wife died in 1942. Later he married Miss Dorothy Ballam who survives him. To his wife and to his only son Lawrence, we extend our deepest sympathy.

H. G.-W.

Durban
5 June 1952.

THE BENEVOLENT FUND

The following contributions to the Benevolent Fund during March–April 1952 are gratefully acknowledged:

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PASSING EVENTS

We regret to record the death of Dr. M. T. Ascough of 5 Upper Mount Street, King William's Town, C.P.

* * * *

In April this year, the Anatomy Department of the Hebrew University—Hadassah Medical School was opened in Jerusalem, Israel. The course, which has proceeded very satisfactorily so far, started with 54 students.

* * * *

Dr. John Leeming of Durban is visiting London in July to attend the Tenth International Congress of Dermatology.

* * * *

On 1 June 1952 Dr. F. H. Dommisse, the doyen of Cape Town radiologists, retired from active practice. He has been prominent in his profession for over 50 years, and he spent 25 of them in active radiological practice.

His friends, his colleagues and his patients all hope that he will find his years of retirement long and full.

MEMBERS' PUBLIC LIABILITY INSURANCE

As a result of representations made by the Federal Council, the Atlas Assurance Company Limited has agreed to issue an endorsement to all policyholders as from 1 June 1952 whereby their malpraxis policy will 'include cover in respect of claims arising out of the act of a locum tenens temporarily employed by the insured'.

Although this endorsement is to be included in the existing policies, principals should nevertheless insist that their locums should be covered by a malpraxis policy in their own right. Practitioners would be well advised to take out such a policy before accepting a locum tenency. The Head Office of the Association will be ready to supply information on the subject at any time.

THE CAPE TOWN PAEDIATRIC GROUP

The next meeting will be held in E4 Lecture Theatre at Groote Schuur Hospital on Friday, 4 July 1952 at 8.15 p.m.

Dr. P. V. Suckling will speak on: *Malignant Malnutrition and its Treatment*.

'PRESSE MEDICALE' MEDICO-SURGICAL CINEMA COMPETITION

This first competition of its kind was organized by *La Presse Medicale*. On 4 April 1952 a public meeting was held in the largest amphitheatre of the Faculty of Medicine, where the jury had to decide on a short list of 7 films selected after 2 elimination contests.

The first prize of 50 000 francs was awarded to a film entitled *Reanimation of the Heart*, by Pierre-Marion, Gard, Gregoire, Termet and De Leuze of Lyons. The two second prizes of 25 000 francs each went to the films *Bronchocinematography* by Fourestier, Vulmiere and Gladu of Paris, and *Life of the Most Premature* by Rossier and Michelin of Paris.

Ten thousand franc awards were made for the following films:

Glomerulo-nephritis, by Hamburger, Wattez and Barbizet of Paris; *Spondylolisthesis*, by Prof. Merle d'Aubigne of Paris; *Lobotomy*, by Ferey and Cathalia of Rennes; and *Sciatica of the Frog*, by Bligh and Bashbass of London.

Dr. W. P. U. Jackson: 1952 Eli Lilly Medical Research Fellow (South Africa).

The Selection Committee of the Cape Town Post-Graduate Medical Association has appointed Dr. W. P. U. Jackson as the Eli Lilly Medical Research Fellow (South Africa) for 1952.

Dr. W. P. U. Jackson

Dr. W. P. U. Jackson, 34 years old, was born in Wolverhampton, England. He studied chemistry and pre-clinical subjects at Cambridge as a scholar of Sidney Sussex College, where he obtained 1st Class honours in the Tripos. He was a B.A. scholar for a year, demonstrated in Anatomy and then proceeded to the London Hospital as a Price Scholar. Qualifying M.B., B.Chir. in 1942 he obtained the M.R.C.P. diploma 6 months later. In the Royal Air Force for 4 years, he served as medical specialist for two of them. He proceeded to the degrees of M.A. in 1946 and M.D. in 1947, his thesis for the latter concerning the epidemiology of influenza B. He spent 2 years as Assistant Physician and Paediatrician at Selly Oak Hospital, Birmingham, where he started a diabetic unit, and obtained the D.C.H. in 1948. From here in 1949 he came to South Africa as Assistant to Prof. F. Forman in the Department of Medicine, where he has worked particularly on metabolic problems and inherited bone diseases.

His published work includes papers on sciatica, Reiter's syndrome, pneumococcal meningitis, small gut insufficiency and several of the inherited bony disorders.

He is a keen mountaineer and bridge player and represents Western Province at Squash Rackets. His wife, who will accompany him to America, has played for England at hockey.

Memorial to Dr. R. Broom, F.R.S.

The South African Association for the Advancement of Science is to establish a memorial to the late Dr. Robert Broom. The memorial is to take the form of a bronze study of Dr. Broom at the site of his major discoveries in the Sterkfontein Caves near Krugersdorp in the Transvaal.

The memorial to Dr. Broom

The estimated cost of the erection of the bronze is £650, and members who wish to contribute towards this cost are asked to send their contributions to the Assistant General Secretaries, South African Association for the Advancement of Science, P.O. Box 6894, Johannesburg. Cheques should be made payable to the South African Association for the Advancement of Science and endorsed *Robert Broom Memorial Fund*.

REVIEWS OF BOOKS

Pharmacological Principles of Practice

The Pharmacologic Principles of Medical Practice. By John C. Krantz, Jr., and C. Jelleff Carr. (Pp. 1116 + xvii, with 95 figures. 76s. 6d. 2nd ed.) London: Baillière, Tindall & Cox. 1951.

Contents: Part I: The History of Pharmacology, Pharmacologic Principles, and an Introduction to Drugs. Part II: The Anti-Infective Drugs. Part III: The Response of the Skin and Mucous Membranes to Drugs. Part IV: The Response of the Central Nervous System to Drugs. Part V: The Response of the Autonomic Nervous System to Drugs. Part VI: The Pharmacologic Response of the Heart and Circulation. Part VII: The Pharmacologic Response of the Reproductive System. Part VIII: Effect of Pharmacologic Agents on Metabolism. Part IX: Appendix.

Only 2 years have passed since the first edition of this book; this is in itself a good indication of the popularity of the volume. With such rapid advances and changes being made in pharmacology, extensive revision becomes necessary in all branches of the subject. This edition is fully up to date. New chapters have been included on the chemotherapy of tuberculosis, the chemotherapy of rickettsial diseases, on anti-motion sickness drugs and on the treatment of arthritides. There are new illustrations and Tables, new references and additions and deletions to conform with the U.S.P. XIV, N.F. IX and N.N.R. 1950.

Those who consider the study of drugs a dull affair will find the subject most interestingly presented in this volume. The pharmacodynamic and pharmacotherapeutic actions of the drugs used in the treatment of disease are considered, with special emphasis on the mechanism of action and clinical application. Important facts, both old and very new, are supported by references to the original articles, and interesting historical or personal observations are given. Problems awaiting further investigation are indicated. The effects of drugs in man are mainly emphasized but the experimental basis for many statements is often given.

The book is attractive, interesting, and is written in a very readable style. It is a valuable addition to the textbook literature and is fully recommended.

Radiology Year Book

The 1951 Year Book of Radiology (June 1950–June 1951). Radiologic Diagnosis edited by F. J. Hodges, M.D. and J. F. Holt, M.D. Radiation Therapy edited by H. W. Jacox, M.D. and V. P. Collins, M.D. (Pp. 394, with 368 figures. $7.00.) Chicago: The Year Book Publishers, Inc. 1951.

Contents: *Part I: Diagnosis*. 1. Introduction. 2. Technical Developments. 3. The Head. 4. The Spine and Extremities. 5. The Chest. 6. The Gastro-intestinal Tract. 7. The Genitourinary Tract. *Part II: Radiation Therapy*. 8. Introduction. 9. Head and Neck. 10. Breast. 11. Gynecology. 12. Gynecology. 13. Blood Dyscrasias, Lymphomas and Allied Diseases. 14. Miscellaneous Conditions. 15. Hazards and Injuries. 16. Treatment Technics. 17. Physics and Dosimetry. 18. Radiobiology.

The present *Year Book of Radiology* almost maintains the high standard of abstract and illustration of its predecessors, and it covers the usual wide range of interesting subjects.

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About two-thirds of the volume is devoted to diagnostic radiology and about one-third to radiotherapy. In the diagnostic section the proportion of abstracts from the general medical literature to those from the radiological literature is less than 1:2, while in the therapy section this ratio is approximately 1:1. This suggests that the *Year Book* may prove disappointing to those who read the radiological literature of Britain, the North Americas and Scandinavia, as only about one-third of the abstracts have been taken from sources other than these; but in fact such readers may find the *Year Book* a useful means of reviewing easily and briefly the major advances of the past year.

While on the whole the abstracts are good in themselves, the Editorial comment is often the best part, for it is pithy and often intimate, e.g. 'We have been fooled by aberrant pancreas in the walls of the stomach' and 'detection of the rare neoplasms of the small intestine represents careful and alert diagnostic effort and provides a never-failing thrill to the examiner'.

On the therapy side a very serious criticism is the rather loose interpretation of dosage. The Editors have failed to allow for the conventional British use of the skin dose or tissue dose, and in abstracting papers from British sources they have misquoted as air dose, doses that were skin doses in the original articles.

The Index appears to have been compiled thoroughly and carefully, and this book can be recommended to all radiologists, except only that the doses quoted from papers by British authors should be viewed with suspicion. It can also be recommended to physicians who are interested in obtaining a bird's-eye view of the progress made in this specialized field that still has a wide appeal on both the diagnostic and the therapeutic sides.

NERVOUS DISEASES

The Diagnosis of Nervous Diseases. By the late James Purves-Stewart, *K.C.M.G.*, C.B., M.D., F.R.C.P. and C. Worster-Drought, M.A., M.D., F.R.C.P. (Pp. 962, with 388 figures. 10th ed. 50s.) London: Edward Arnold & Company. 1952.

Contents: 1. Physiological Anatomy. 2. Physiological Anatomy (continued). 3. Method of Case-Taking. 4. Delirium. 5. Coma. 6. Convulsive Phenomena. 7. Involuntary Movements. 8. Aphasia. 9. Disorders of Articulation. 10. Cranial Nerves. 11. Cranial Nerves (continued). 12. Pain and other Abnormal Subjective Sensations. 13. Abnormalities of Sensation: Hyperaesthesia, Paraesthesia, Anaesthesia. 14. Organic Motor Paralysis of Upper Neurone Type. 15. Organic Motor Paralysis of Lower Neurone Type. 16. Recurrent and Transient Palsies. 17. Inco-Ordination. 18. Postures and Gaits. 19. Reflexes. 20. Trophic Disorders. 21. Affections of the Autonomic Nervous System. 22. The Psychoneuroses and Psychoses. 23. Disorders of Sleep. 24. Electro-Diagnosis. 25. The Cerebrospinal Fluid. 26. Intracranial Tumours. Index.

This standard work, on which many generations of undergraduates and practitioners have relied since it first appeared in 1906, now appears under joint authorship for the first time.

Purves-Stewart has always been regarded as an invaluable and comprehensive fount of information and the re-writing of numerous sections and even chapters has served only to enhance the value of this excellent treatise.

Dr. Worster-Drought has been responsible for many of the clinical photographs in earlier editions and he has included an obituary appreciation of Sir James Purves-Stewart in this 10th edition.

TREATMENT OF HEADACHE

Modern Headache Therapy. By Arnold P. Friedman, M.D. (Pp. 164. £1 14s.) St. Louis: C. V. Mosby Company. 1951.

Contents: 1. Diagnosis. 2. Treatment. 3. Mechanisms of Pain. 4. Headaches Associated with Intracranial Disorders. 5. Headaches Associated with Extracranial Disorders. 6. Headache Due to Systemic Disorders. 7. Migraine Headache. 8. Psychogenic Headache. 9. Posttraumatic Headache. Index.

The complaint of headache is met very frequently in practice and often constitutes one of the most difficult therapeutic problems. This little volume will be found of considerable assistance in the understanding and management of these cases. The author has obviously had considerable experience in this field and speaks with the voice of authority and understanding.

One of the most pleasing aspects of the book is the method and style of presenting the subject. An introductory panoramic review of diagnosis and treatment is stated very well and gives balance to the more detailed matter that follows. The book is sufficiently concise for the busy practitioner and is written in a pleasant, lucid and easily flowing style.

The therapeutic agents and measures in the management of headache are rather limited and would in themselves fill but a few pages. To ensure their adequate application, consideration is given to the patterns and diagnostic approach to the various types of headache. The high incidence of psychogenic headache is well brought out. It is, however, emphasized that such a diagnosis should not be made lightly. The subject matter relating to this aspect reveals considerable experience and wisdom. Some of the statements are truisms that may well apply to the whole field of clinical medicine.

The book is recommended to both students and practitioners.

INFECTIVE HEPATITIS

Infective Hepatitis: Studies in East Anglia during the Period 1943–47. By F. O. MacCallum, A. M. McFarlan, J. A. R. Miles, M. R. Pollock and C. Wilson. (Pp. 144 + vi, with 61 tables. 4s. 6d.) Medical Research Council Special Report Series No. 273. London: His Majesty's Stationery Office. 1951.

Contents: 1. Epidemiological Studies. 2. Clinical Observations. 3. Biochemical Observations. 4. Haematological Investigations. 5. Serological Investigations. 6. Transmission Experiments. 7. Summary.

The investigations recorded in this report were completed in 1947. Because much of the work had already been published in the medical press, precedence in the Medical Research Council's Special Report Series was given to work of which accounts were not available elsewhere. Though late in appearing, and even if on that account there is not much new, in 1951, in this contribution to the study of infective hepatitis, a publication which deals comprehensively with the subject as a whole is nevertheless welcome. The section on the epidemiological aspects is particularly interesting, and the conclusion that infection can be spread by either pharyngeal secretions or faeces is acceptable.

In addition to the different kinds of pain mentioned, the reviewer has encountered cases in which it has very closely resembled biliary colic. This may add decidedly to the difficulty in diagnosis when so many other features of infective hepatitis are what may be called 'obstructive'. No one disputes the hepatocellular lesion in this condition. The old theory of catarrh with plugging of the common duct by mucus has for long been discarded as the cause of the clinical picture. But must we say that it never occurs? The evidence for its occurrence is certainly very slender. There is Hurst's single autopsy case. But not so long ago a report appeared in Acta Medica Scandinavica of 4 cases which had continued with obstructive symptoms unduly long and were on that account explored surgically. When no stones were found the common duct was irrigated with saline. We are told that the relief of the symptoms was dramatic.

For how long must patients be confined to bed? In Israel, where infective hepatitis has long been endemic, it is customary to allow patients to get up even before the jaundice has cleared. Yet they do not report an undue incidence of cirrhosis either clinically or at autopsy. But we know from the experience during the last war how jolting or dietary indiscretions can precipitate relapses. It is not rare to find abnormal chemical tests (colloidal gold, thymol turbidity and thymol flocculation) in patients who have, as far as can be judged by clinical criteria, recovered. Must such patients be confined to bed longer?

There is a number of other problems left unanswered in this work. Why do some observers report a failure of the chemical tests, especially serum bilirubin, to return to normal in a large percentage of their cases? Others find a high proportion ending up with frank cirrhosis—76 out of 431 by Barker, Capps and Allen. Most observers find that the vast majority of their cases clear up completely.

It is in a work of this kind that one looks to see whether a particular sign or symptom is found in the disease—and with what frequency. On the question of lymph gland enlargement we find the following unhelpful statement: 'Enlarge-

ment of superficial lymph glands was looked for in this series but was not found with sufficient constancy to be regarded as an integral feature of the infection'. In Table 28 other signs or symptoms are listed as occurring in 7% or 11%, respectively, of cases.

THE GLAUCOMAS

The Glaucomas. By H. Saul Sugar, M.D., F.A.C.S. (Pp. 469, with 123 illustrations. £5 4s.) St. Louis: C. V. Mosby Company. 1951.

Contents: 1. Glaucoma Concepts During the Preophthalmoscopic Period of Ophthalmology. 2. The Anatomy and Histology of the Eye in Relation to Glaucoma. 3. Terminology. 4. The Aqueous Humor: Its Production, Drainage, and Circulation. 5. Physiologic Mechanisms in Normal and Increased Intraocular Pressure. 6. Tonometry. 7. The Classification of the Glaucomas. 8. The Adult Primary Glaucomas. 9. The Etiology of the Adult Primary Glaucomas. 10. The Pathology of the Adult Primary Glaucomas. 11. Drugs Used in the Treatment of the Glaucomas. 12. Chronic Simple Glaucoma. 13. The Diagnosis of Early Simple Glaucoma. 14. Perimetry in Chronic Simple Glaucoma. 15. Gonioscopy in Chronic Simple Glaucoma. 16. The Treatment of Chronic Simple Glaucoma. 17. Acute Primary (Narrow-Angle) Glaucoma. 18. Gonioscopy in Acute Primary Glaucoma. 19. The Diagnosis of Early Acute Primary Glaucoma. 20. The Treatment of Acute Primary Glucoma. 21. The Congenital or Infantile Glaucomas. 22. The Secondary Glaucomas. 23. The Antiglaucoma Operations in Primary Glaucoma. Iridectomy. 24. Filtering Operations. 25 Cyclodialysis. 26. Cyclodiathermy. 27. Goniotomy. 28. Other Operations. 29. Glaucoma Clinics and Educational Programs. Index.

The author modestly describes this volume as not being a complete treatise but a statement of his own viewpoint. However, he has managed to give a thoroughly workmanlike review of the whole subject, with a full bibliography at the end of each chapter. Whatever bias he displays is logical, reasonable and lucid. It is pleasing to find that, in his chapters on the anatomy and physiology of the eye, he has not burdened the reader with a mass of details which can be found elsewhere, but has instead confined himself to relevant material. All the recent drugs and diagnostic techniques, including gonioscopy, are detailed and there is a full discussion of the various operative procedures available. In the classification of the glaucomas (p. 118) there appears a typographical error which can be clarified by reference to the author's less expanded article in the American Journal of Ophthalmology (1949): **32**, pp. 425-433. His classification of the secondary glaucomas is, I feel, less simple to remember than Duke-Elder's (*Textbook of Ophthalmology*, 1945, Vol. III, pp. 3285 *et seq.*) where it is treated on an aetiological rather than anatomical basis.

In the treatment of acute glaucoma it is noted that the author does not temporize as long as Duke-Elder or Parsons advises. If medical treatment does not reduce the tension, he does not delay more than 2-4 hours before resorting to surgery.

This is an excellent presentation of the subject and, furthermore a magnificent example of the bookmaker's art, good paper, clear printing and beautiful illustrations.

MILITARY SURGERY OF THE EXTREMITIES

Wounds of the Extremities in Military Surgery. By Oscar P. Hampton, Jr., M.D., F.A.C.S. (Pp. 434, with 131 illustrations. £4 5s.) St. Louis: C. V. Mosby Company. 1951.

Contents: 1. General Considerations of Military Surgery. 2. First-Aid Measures and Emergency Splinting. 3. Initial Wound Surgery, Including Preoperative Preparation and Transportation Splinting. 4. Reparative Wound Surgery. 5. Special Types of Injury: I. Vascular and Nerve Injuries. 6. Special Types of Injury: II. Compound Fractures. 7. Special Types of Injury: III. Wounds of the Joints. 8. Special Types of Injury: IV. Amputations (Including Indications for Amputation). 9. Burns. Trench Foot. 10. Regional Injuries: I. Compound Fractures of the Femur. 11. Regional Injuries: II. Compound Fractures of the Tibia and Fibula. Wounds of the Foot. 12. Regional Injuries: III. Compound Fractures of the Humerus, Radius and Ulna. 13 Regional Injuries: IV. Wounds of the Hand. 14. Anaerobic Wound Infections. References. Index.

The author—Chief Orthopaedic Consultant to the American Forces in the North African and Mediterranean Theatres during World War II—must be congratulated on producing what is virtually the first textbook of its kind for the military surgeon.

He begins with a detailed description of the general set-up of a war-time medical organization, planned to give maximum efficiency and based on the experiences of the last World War and those of the more recent conflict in Korea.

The basic principles of surgery have to be modified in war-time, because of innumerable factors which do not apply in civilian practice. Lessons learned in the previous 2 wars have led to the formulation of surgical principles as they affect military surgery, with the result that many well recognized and previously accepted methods of treatment have had to be modified and improved upon.

The battle casualty is followed from the battalion aid station in the combat zone (where first-aid measures are applied) through the various stations, each of which plays its part in the principle of staged treatment, including resuscitation, debridement, provision of drainage, immobilization and, finally, reparative surgery of the wound in the large base installation between the fourth and seventh day after the original operation.

The individual chapters dealing with special types of injury are all presented in great detail, all the information being completely up to date and representing the views generally accepted to-day.

Throughout, the book is well illustrated by excellently produced drawings and photographs.

EPIDEMICS IN SCHOOLS

Epidemics in Schools. By E. A. Cheeseman. Medical Research Council. Special Report Series No. 271. (Pp. 96 with tables. 3s.) London: His Majesty's Stationery Office. 1950.

Contents: 1. Introduction. 2. Populations Exposed to Risk. 3 Main Causes of Sickness. 4. Influenza and Nasopharyngeal Infection. 5. Infectious Diseases. 6. Rheumatism. 7 Otitis Media. 8. Sinusitis. 9. Pneumonia. 10. Gastro-Intestinal Disorders. 11. Appendicitis. 12. Jaundice. 13. Trauma. 14. Tinea Cruris 15. Conjunctivitis. 16. Tuberculosis. 17. Deaths. 18. Time lost from School. 19. Summary and Conclusions. References.

In 1929 the Medical Research Council appointed a committee to investigate the occurrence and spread of epidemic diseases —especially those believed to be conveyed by droplet infection —in English residential schools. An analysis and a discussion of the data for the period 1930–1934 was published in 1938 as *Special Report No. 227*. The present report deals with the second 5-year period (1935–1939) but also brings into account the earlier records and presents finally a summary for the full 10-year period.

This *Report* should prove of value and interest to all those concerned with public-health problems in general and with the health of school children in particular. With its carefully applied statistical criteria this report will serve as a 'corrective to every-day impressions' and should prove of value in the formulation of schemes aimed at reducing the incidence rate of 'a group of diseases that in children gives rise to so much lost time and so much loss of health'.

GENERAL SURGERY: 1951

The 1951 Year Book of General Surgery (July 1950–May 1951). Edited by Evarts A. Graham, A.B., M.D., with a section on Anaesthesia edited by Stuart C. Cullen, M.D. (Pp. 621 + viii, with 209 figures. $5.00.) Chicago: The Year Book Publishers Inc. 1951.

Contents: 1. General Topics. 2. Burns and Shock. 3. Fluid and Electrolyte Balance. 4. Nutrition. 5. Wounds and Infection. 6. Antibiotics—Chemotherapy—Antiseptics. 7. Neoplasm. 8. Central Nervous System. 9. Head and Face. 10. The Thyroid and Parathyroid. 11. Neck. 12. Breast. 13. Lung and Thoracic Cavity. 14. Mediastinum and Bony Thorax. 15. Heart and Major Blood Vessels. 16. Sympathectomy. 17. Arterial System. 18. Peripheral Venous System. 19. Esophagus. 20. Abdomen —General. 21. Hernia. 22. Stomach and Duodenum. 23. Liver—Spleen —Portal Venous System. 24. Biliary System. 25. Pancreas. 26. Small Intestine. 27. Vermiform Appendix. 28. Colon and Rectum. 29. Anus. 30 Genitourinary System. 31. Adrenal Gland. 32. Extremities. 33 Surgical Armamentarium.

Anesthesia. 34. Agents and Technics for Special Situations. 35. Physiologic Changes during Anesthesia. 36. Local Analgesic Drugs. 37. Spinal Analgesia. 38. Analgesic Drugs. 39. Intravenous Barbiturates. 40. Muscle Relaxants. 41. Inhalation Therapy. 42. Endotracheal Technic.

The latest *Year Book of Surgery* has made a welcome appearance and has again shown the Editor's ability to select the best articles in current surgical literature.

The recent and rapid advances in general surgery can

readily be discerned by the reader, but one field in particular, cardiac surgery, is worthy of mention. The interior of the heart (which up to recent years has seldom been attacked surgically) has received prominent attention. This refers chiefly to mitral stenosis and pulmonary stenosis, where the best results have been obtained. Mr. R. C. Brock has made notable contributions, and makes one feel that surgery of the heart has come to stay. By the inclusion of the interesting and brain-testing surgical quiz, the powers of the reader will be tested to the fullest degree. It is pleasing to note that little mention has been made of the ligation of large veins for pulmonary embolism. It is an operation undertaken too lightly in the past and which has often led to serious complications.

The general surgeon will find articles in various fields of surgery to interest him. The surgery of carcinoma of the oesophagus and the stomach has been reviewed carefully but the results remain disappointing. Articles on large bowel, blood vessels, liver and anaesthesia make worth-while reading. It is disappointing that more mention has not been made about surgery for hypertensive disease, as it is a subject which daily confronts the surgeon.

Like all the previous excellent editions of the *Year Book of Surgery*, this volume has proved exceptional and should be in the possession of every surgeon.

HISTORY OF MEDICINE

Essays on Historical Medicine. By Bernard J. Ficarra, A.B., Sc.B., M.D. (Pp. 220 + x, with illustrations. $5.00.) New York: Froben Press Inc. 1948.

Contents: 1. American Pioneers in Abdominal Surgery. 2. Amputations and Prostheses Through the Centuries. 3. Famous Cripples of the Past. 4. Surgical References in Shakespeare. 5. The Evolution of Blood Transfusion. 6. Walter Reed at Kings County Hospital. 7. An Historical View of Pathology. 8. Famous Autopsies in History.

Professor Ficarra deals with varied subjects, his interests ranging from Egyptian amputations to surgery of the twentieth century.

There are some interesting descriptions of famous autopsies, some of which throw very little light on the patients' diseases. Unfortunately the book contains no index, but many who have read A. C. MacLaurin's *Post Mortem* will find much to interest them in this.

Some of the illustrations are crude and the reproduction very poor; the portraits of Virchow, Sir Astley Cooper and Hodgkin reflect no credit on the originals and that of Dr. Walter Reed's hospital none on the publishers.

There is no list of illustrations and no index, and for a book published in 1948 the latter is inexcusable. Dr. Ficarra's essay on *Surgical References in Shakespeare* is laboured and does neither himself nor Shakespeare justice.

There are several interesting facts which are unfortunately hidden in the various essays, but the book, on the whole, is well worth reading.

SOLUTION AND DOSAGE

Solutions and Dosage. By Sara Jamison, R.N. Second Edition. (Pp. 163 + xiii, with figures.) New York, Toronto, London: McGraw-Hill Book Company, Inc. 1951.

Contents: *Part I*. Arithmetic Review. 1. Basic Processes. 2. Denominate Numbers. 3. Common Fractions. 4. Decimal Fractions. 5. Percentage. 6. Ratio and Proportion. 7. Roman Numerals. 8. Achievement Test.
Part II. Arithmetic in Nursing Arts. 9. Measurements of Temperature. 10. Measurements Used in Preparing Solutions. 11. Solutions from Solids and Full-Strength Liquids. 12. Solutions from Tablets. 13. The Dilution of Strong Solutions. 14. Review Assignments. Nursing Arts.
Part III. Arithmetic in the Administration of Medications. 15. Tablets, Pills, and Capsules for Oral Use. 16. Dosage from Weight in Volume Solutions. 17. Dosage from Hypodermic Tablets and Sterile Crystals and Powders for Injection. 18. Review Assignments. Medical and Surgical Nursing.
Appendix. A. Abbreviations Used in Prescription Writing. B. Tables of Measurements. C. Answers.

A great responsibility rests on nurses in making correct mathematical calculations in the administration of drugs. Nurses must be trained in calculating and measuring doses of medicine and in the preparing of solutions. Some students manipulate figures easily and would have no difficulty with the problems given in this volume. However, all students would profit by the use of this book.

Instructors and authorities will more contentedly be assured of the proficiency of students in the subject if the set exercises are attempted systematically, answered and checked—the correct answers are given in the book! Only in this way will complete mastery in percentages, proportions, dilutions and the preparation of doses be attained.

BACTERIOLOGICAL ADVANCES

Recent Advances in Bacteriology. Edited by J. H. Dible, M.B., F.R.C.P. Third Edition. By J. D. MacLennan, *M.B.E.*, M.D. (Pp. 325 + vii, with 14 illustrations. 25s.) London: J. & A. Churchill Limited. 1951.

Contents: 1. The Morphology of Micro-organisms. 2. The Physiology of Bacteria. 3. Bacterial Nutrition. 4. The Staphylococci. 5. Streptococci. 6. The Anaerobic Diseases of Man. 7. The Clostridial Diseases: I. Botulism. 8. The Clostridial Diseases: II. Tetanus. 9. The Histotoxic Clostridial Diseases (I). 10. The Histotoxic Clostridial Diseases (II). 11. Infections by Non-sporulating Anaerobic Bacilli. 12. The Enterobacteriaceae. 13. Diphtheria. 14. Bacterial Chemotherapy. 15. Antibiotics: I. Penicillin. 16. Antibiotics: II. From Soil Bacilli. Index.

In this completely revised edition the researches in medical bacteriology of the last 20 years have been reviewed.

As would be expected from the chief author, J. D. MacLennan, the emphasis is laid on the work done on the anaerobic bacteria. Of particular interest is the account of the anaerobic cocci, which have largely been ignored until recently, but which are of considerable importance. It is obvious, however, that much remains to be undertaken in order to classify them satisfactorily.

The final chapter has been contributed by Miss Mary Barber, M.D., and deals with the antibiotics and their clinical uses.

MANIPULATIVE TREATMENT

Treatment by Manipulation. By H. Jackson Burrows, M.D., F.R.C.S., F.R.A.C.S. and W. D. Coltart, M.B., F.R.C.S. Second Edition, Fully Revised. (Pp. 80. 12s. 6d.) Published on behalf of 'The Practitioner' by Eyre & Spottiswoode Limited. 1951.

Contents: *Part I*. General Considerations. 1. Terminology. 2. Selection of Cases for Manipulation. 3. The General Management of Manipulation Cases. 4. Dangers of Manipulation. 5. Failure in Manipulation.
Part II. Affections of Individual Parts, and their Manipulation. 6. The Foot and Ankle. 7. The Knee. 8. The Hip. 9. The Neck. 10. The Back. 11. The Coccyx. 12. The Shoulder. 13. The Elbow. 14. The Wrist and Hand. 15. The Temporo-Mandibular Joint.

This handy little volume has retained the elementary character and the brevity of the original edition. The simple manipulative techniques are explained lucidly and are illustrated by numerous excellent photographs. Emphasis is laid upon distraction, and consequently general anaesthesia is employed in most of the procedures which are completed in one sitting.

In a discussion of the causes of low-back pain and their appropriate manipulative treatment, the importance of prolapsed intervertebral disc lesions in the causation of 'lumbago' and 'sciatica' is stressed in this new edition.

The book will be found useful by those who seek a simple, even elementary, description of the more common manipulative techniques.

MIDWIFERY AND GYNAECOLOGY

A Practical Handbook of Midwifery and Gynaecology for Students and Practitioners. By W. F. T. Haultain, *O.B.E.*, *M.C.*, B.A., M.B., F.R.C.P. (Ed.), F.R.C.S. (Ed.), F.R.C.O.G. and Clifford Kennedy, M.B., Ch.B., F.R.C.S. (Ed.), F.R.C.O.G. (Pp. 412 + x, with 47 illustrations. 24s.) Edinburgh and London: E. & S. Livingstone Limited. 1952.

Contents: 1. Anatomy, Development and Physiology. 2. Diagnosis of Pregnancy. 3. Antenatal Care and Calculation of Date of Confinement. 4. Normal Labour. 5. The Puerperium. 6. Pathology of Pregnancy. 7. Haemorrhages During Pregnancy. 8. Abnormal Presentations in Labour and Multiple Pregnancy. 9. Delayed Labour. 10. Contracted Pelvis. 11. Other Major Complications of Labour. 12. Obstetrical Manipulations and Operations. 13. Complications of Puerperium. 14. Puerperal Sepsis. 15. Infections of Genital Tract. 16. Displacements of the Uterus. 17. Disorders of Menstruation. 18. Diseases of the Uterus. 19. Diseases of the Ovary and Fallopian Tubes. 20. Diseases of the Vagina, Vulva and Urethra. 21. Venereal Diseases Affecting the Generative Organs. 22. Sexual Disorders. 23. Therapeutic Use of Hormones in Obstetrics and Gynaecology. 24. Gynaecological Operations. 25. The Infant. Appendix: The Uses of X-Ray in Obstetrics and Gynaecology. Index.

Among the many textbooks on gynaecology and obstetrics which continue to appear, the new fourth edition of the well-known handbook by Haultain and Kennedy, which embraces

the conservative teaching of the Edinburgh school, stands out in its class.

The changing trends in gynaecology and obstetrics have necessitated a thorough revision of this handbook. Chapters which have been entirely re-written are those on placenta praevia, delayed labours, venous thrombosis and dysmenorrhoea. The section on the infant and infant feeding has likewise been re-written; and a short, but lucid section on the Rh factor has been added.

In considering the treatment of central placenta praevia, the authors have adopted the modern point of view and advise caesarean section to the exclusion of practically all other forms of treatment. Caesarean section is also advised in cases of partial placenta praevia where the patient is a primigravida. In the discussion of the ineffective uterus, due emphasis has been placed on the role of inco-ordinate uterine action in the production of delayed labour.

This compact book, covering as it does the whole subject of gynaecology and obstetrics, has been presented in a form which, although synoptic, is interesting to read and easy to assimilate. The views expressed are sound and it can be warmly recommended to both the final-year student and the busy practitioner requiring a reliable and up-to-date reference book on gynaecology and obstetrics.

CORRESPONDENCE

VALUE OF BCG VACCINE

To the Editor: I was much interested in the Editorial, *Vaccination Against Tuberculosis: Is it Effective?* in the March issue of your *Journal*. More such frank statements are needed. This is perhaps one of the most pressing problems facing the medical profession to-day, and it is proper that the issue should be decided by a free medical discussion of the facts by those concerned. There is a widespread feeling that BCG 'wont hurt anything', and that therefore the medical profession can afford to relax its insistence upon scientific evaluation. As a matter of fact, the use of BCG is attended with serious liabilities, and its effectiveness in preventing tuberculosis should be demonstrated beyond question before it is used generally.

Your Editorial, I thought, summarized very adequately some of the problems regarding BCG. So far as I am concerned, the most disturbing evidence of all is the plain fact that after 40 years its effectiveness is still a matter for debate. Every major study of its positive contribution to tuberculosis control is open to serious objection. Even among its proponents, there is little agreement as to what, exactly, is to be gained by its use.

If there were only a question of the amount, duration and consistency of the immunity this vaccine confers, it would be open to objection. As a matter of fact, however, there is no way of demonstrating any immunity at all resulting from its use, except by controversial statistics.

This same uncertainty prevails in all aspects of the subject.

1. There is absolutely no agreement on the most efficient method of vaccination. Calmette administered the vaccine by mouth and reported good results; later, investigators rejected this method as of no benefit. Rosenthal, Birkhaug, and others have insisted that the best results are obtained by the technique of multiple puncture. In Scandinavian countries, subcutaneous administration is practised and recommended.

2. There is no agreement on what constitutes a successful vaccination. Some investigators regard a local reaction as proof of a 'take', while others insist that tuberculin sensitivity must take place.

3. It has generally been assumed that the development of tuberculin sensitivity, at least, indicates the development of immunity. Aronson, however, has concluded that there is no immunity until the tuberculin test becomes *negative* again.

A very basic problem is that we do not know exactly what BCG really is in any specific instance. The organisms in the cultures vary from one institution to another, and they are subject to wide variation in potency within one strain. In a recent article, Levine says[1]:

'According to Suter and Dubos, if a specified amount of BCG from three different laboratories is inoculated into the skin of guinea-pigs, there is found to be a specific difference between each vaccine not only in the size of the local lesion, but in the persistence of the lesions as well. In a further experiment, Suter and Dubos injected larger doses of BCG from the 3 different laboratories intraperitoneally into guinea-pigs. Here, also, there were marked differences in pathological findings. The mesenteric nodes were swollen in guinea-pigs infected with strains I and III, but normal in those receiving strain II. Only strain III caused enlargement of the spleen, whereas the largest macroscopically visible lesions in the lung were found in animals infected with strain I. Lesions elicited by culture III were smaller in size and number, whereas no lesions were found in animals injected with culture II.'

Other studies have confirmed this complaint of excessive variation in the effect of the different strains of BCG. In the well-known experiments with different vaccines in Denmark, it was found that a vaccine from Madras was *one-fortieth* as potent as a French vaccine, as measured by skin sensitivity. Further, there is evidence to indicate that such strain has a characteristic viability of its own. Dubos, according to Levine, found that certain vaccines lost up to 90% of their viable organisms in the first 24 hours after preparation if the vaccine was not kept constantly under refrigeration. Aronson and Schneider reported a 'significant decrease in the number of viable organisms kept from 5 to 7 days at either 4 or 20° C'.[2] Jansen has reported similarly. What do we propose to administer to human beings? A *drug* of such uncertain properties would never even be proposed for licensing; why is such variation more tolerable in a culture of acid-fast bacilli? The accidents which have been reported occasionally in the use of BCG emphasize this fact; we can never be sure just what we are administering. By the time we have determined the potency of a batch of vaccine, a marked change in its composition has very likely taken place.

Even the basic theory of vaccination for tuberculosis has been questioned in recent years. The assumption has been that a primary infection, of the kind usually seen in childhood, offers some degree of protection against later second infection. BCG, then, is regarded as a controllable substitute for a primary infection. However, there is increasing evidence against the protective role of such primary infections. The marked reduction in the tuberculosis death rate in the United States in the last 20 years has been accompanied by a decrease in the number of primary childhood infections. It was feared some years ago that such a reduction might give rise to an increase in adult, fulminating primary tuberculosis, since more and more adults were being denied the 'protection' of primary childhood infection. However, such has not proven to be the case. Among selected groups, such as student nurses, there is no evidence that those without primary infection are more subject to the disease than those with evidence of having had such infection. It is not irrelevant to point out that a characteristic of tuberculosis in the United States to-day is that it is found in an increasingly older age group; it is at its maximum it would seem, in the very age group in which the greatest number of primary, childhood infections are to be found.

I understand that the problem in South Africa is not that with which we are confronted here in the United States, even though our population includes approximately 15 million Negroes. BCG is proposed in your country to combat massive, so-called primary infections among the Native population which approach epidemic proportions. However, the distinction is valid only if it is conceded that there is a real distinction between primary and secondary infections, and only if a primary infection is protective. This, as has been suggested, is doubtful. There is a distinct possibility that BCG is actually harmful to those groups least able to resist primary

1. Levine, Milton, J. (1952): *Deficiencies in our Knowledge of BCG Vaccine*, in *Diseases of the Chest*, **21**, No. 5, May.

2. Aronson, J. D. and Schneider, R. (1950): *The Problem of the Standardization of BCG Vaccine*. Amer. J. Pub. Hlth., **40**, 533.

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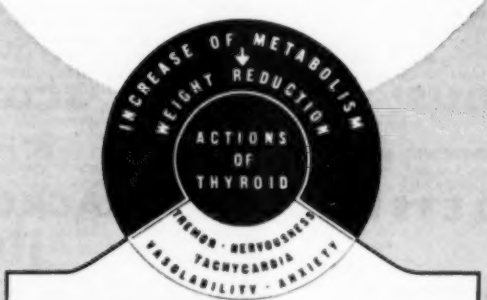

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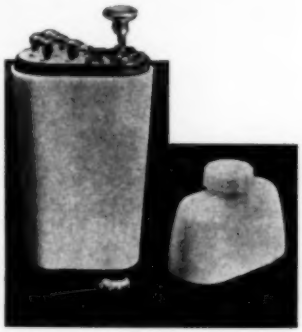

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infections. In Brazil, the mortality rate of tuberculosis in childhood has *risen* 50% since oral inoculation with BCG at birth has been instituted.

In such a problem as you are faced with in South Africa, how is it proposed to handle the situation surrounding the vaccination? Almost all the proponents of BCG in this country lay down stringent requirements in this matter, although there is no general agreement upon particular requirements. It has been insisted that inoculated persons be exposed to moderate amounts of human acid-fast bacilli shortly after the inoculation; nurses have been deliberately put on tuberculosis wards for brief periods post-inoculation. On the other hand, it has been suggested that isolation from possible infection be stringently maintained for 6 weeks before and following administration of the culture. It is generally agreed that isolation before inoculation is desirable. These are obviously impracticable considerations when the group is to be a large Native population. On the other hand, there is evidence that failure to control such factors can make BCG markedly dangerous. Emil Bogen, on the basis of animal experiments, offers 2 findings of considerable relevance to this question:

1. The administration of BCG after infection has occurred will spread the infection, or it will kill, according to the size of the dose.

2. A massive infection is more rapidly lethal among animals inoculated with BCG than among controls.

Certain disadvantages of BCG are beyond dispute. In the first place, one of our most valuable diagnostic tests is hereby lost. Tuberculin sensitivity is certainly the most inexpensive and, in some circumstances, most generally useful test for tuberculosis that is available. We have, in Streptomycin and PAS, useful bacteriostatic compounds, which we hardly hoped for 10 years ago. A bactericidal drug could be announced at any time. If this should happen in the near future, the loss of the skin sensitivity test for tuberculosis would be tragic, as it would considerably impede the use of such a drug. Is this possibility not an important consideration?

In the second place, every investigator has warned against a good sense of false security which BCG can engender. The most sanguine proponent of BCG does not advocate it as a replacement for traditional prophylactic measures. Those situations in which most has been claimed for the culture are very often still possessed of high mortality rates. This consideration alone, I suggest, should make the use of BCG in South Africa absolutely beyond consideration. In your situation, BCG would have to be Government sponsored to be of any marked effect; the laymen who support the project and provide the money for it are certain to regard it as a replacement for more basic measures. In such a situation, BCG can be a disaster. It will not, by itself, control tuberculosis; and it will be expected by laymen to do just that. The medical campaign for facilities for isolation, for sanitation, for better nutrition, would receive a major setback.

The impulse to do something, anything, about the tuberculosis in your country is understandable. But the medical profession dare not suspend its scientific judgment and be stampeded into the use of a remedy of such doubtful value, and such substantial drawbacks, no matter how desperate the need. Such a development could discredit the whole medical profession in your country. The United States has a reduced tuberculosis mortality rate at the present time of 20 per 100,000 from a rate of 140.1 per 100,000 in 1915. This has been accomplished by persistent effort toward standard prophylactics. Yet, only 75,000 persons out of 150 million have been inoculated to date with BCG. The same prophylactic measures will accomplish the same results in South Africa. Anything that would inhibit this basic effort should be avoided.

The movement for widespread use of BCG is as unwise as anything that has been seen in the medical profession for many years. I congratulate you on your clear analysis of the situation.

Seymour M. Farber, M.D.

University of California,
Medical School,
The Medical Center,
San Francisco 22,
California, U.S.A.
23 May 1952.

IMPORTATION OF MEDICAL FILMS

To the Editor: You are no doubt aware that following the recent Budget, the Customs Duty on imported films has been increased from 6d. to 10d. per foot. Hitherto some medical films have been admitted into the country duty free, provided these are passed as being purely educational; for this purpose an Educational Certificate must be granted by the Film Bureau in Pretoria. It is not intended here, in any way, to examine the pros and cons of the new tariff as far as this concerns commercial films which are exhibited to the general public for gain.

However, I do wish to draw your attention to the fact that the new tariff of 10d. is liable to discourage the importation of medical films as there is absolutely *no guarantee* that an Educational Certificate will be granted in every instance until such time as the film has actually been imported and viewed by the authorities at the Film Bureau.

No medical film can be produced by any overseas manufacturing firm without this having a certain amount of propaganda value. Whereas pharmaceutical manufacturing firms endeavour to be as ethical as possible in the circumstances, and produce their films with the prime object of enlightening the medical profession, there is of necessity some propaganda value attached to every film. However, all medical films, whether they contain propaganda or not, do actually disseminate medical knowledge and must therefore be of some value to the medical profession. Pharmaceutical manufacturers would not object to paying a limited amount of Customs Duty where a medical film contains a certain proportion of propaganda, but to ask them to pay duty on films as a whole (some of which might possibly run to 2,000 feet or more) would, at the new rate of duty of 10d. per foot, render the importation prohibitive.

It must be realized that films of this type have a limited audience and are shown *gratis*. Furthermore, medical films very often become obsolete in a comparatively short time. We feel, therefore, that something ought to be done to alleviate the duty now payable on medical films in those instances where such films do not receive an Educational Certificate.

Possibly some form of intermediate tariff could be applied whereby the duty is assessed on a percentage basis. In this way, when the Film Bureau examines the film the educational value can be assessed and a certificate could be issued stating that the film is either 100% educational, 90% educational or only 50% educational, whatever the case might be. Duty could then be levied on that remaining portion of the film which is considered to be non-educational.

I have brought these views to your attention as I am convinced that in the future the importation of medical films will be reduced considerably unless something is done, because it is absolutely impossible, in the present circumstances, to foresee what would be the fate of a film until it has actually arrived in the country.

A. Christos,
Managing Director,
Protea Pharmaceuticals Ltd.

P.O. Box 7793,
Johannesburg.
2 June 1952.

CORPORAL PUNISHMENT

To the Editor: On the instruction of the Executive Committee of the Penal Reform League of South Africa, I beg to approach you on a matter which has for a long time exercised our minds. I wish firstly to insist upon the fact that the League is not a body of sentimental persons who underrate the seriousness of crime, especially violent crime, and that we are ready to face whatever punishment is necessary, in so far as it is within ethical and medical standards. The matter which is in our minds is *the use of the cat-o'-nine tails* in corporal punishment.

As a League, we have not taken a stand against all corporal punishment. We see grave dangers in its application to adults, with a set personality; but we see a possibility, in some cases of juveniles and juvenile-adults, in which an application of the cane *may* stop a criminal career. With the Lansdown Commission, however, we have long advocated the abolition of the 'cat', because of what we believe to be a wrong approach to violent offenders, as its application makes of them

heroes among their fellow-prisoners, and because of what we have privately heard of the direct physical and moral consequences of this punishment on the punished person.

We have tried to elicit specific and reliable information on these consequences, but without success. Many of our medical officers in prisons must have a direct and professional approach to a punishment which is statutory and has been applied quite frequently in recent years (128 times in 1949 and 64 times in 1950). None of them has reported on the effects of the use of the 'cat', from a medical point of view. We know that a number of them must have witnessed lashes with the 'cat', and that they bear the medical responsibility for its application. We would therefore ask the hospitality of your *Journal* for a direct question to them, and we are also approaching the District Surgeons' Group of the Medical Association with the same question:

1. What is the medical view of the application of lashes with the cat-o'-nine tails as regards the *physical consequences* of this punishment?

2. What is the experience of medical officers as regards the psychological, mental and moral consequences of the use of the 'cat' for the person punished?

3. What is the effect of the use of the 'cat' on the prison community in general and on the prison officer who must carry out the punishment in particular?

4. Is a further application of the 'cat' for a subsequent offence possible, from a medical point of view, without serious injury to the health of the person punished?

I repeat that we are not sentimentalists, but our League exists precisely for the use of adequate and intelligent punishment and treatment of offenders, by methods which have a chance of bringing them back to a decent and normal form of life.

Thank you for your kindness in providing for the publication of this letter in your *Journal*.

H. P. Junod,
National Organizer.

The Penal Reform League of South Africa,
P.O. Box 1385,
Pretoria.
6 June 1952.

BACK NUMBERS OF THE JOURNAL

To the Editor: In order to complete Volume 23 of the *South African Medical Journal* (1949), I require Numbers 1 to 5, 13 and 14. If anyone is able to sell me these numbers, or to assist me in obtaining them, would they kindly communicate with me?

D. S. C. Procter, M.B., Ch.B.

Eshowe,
Zululand.
8 June 1952.

W.C.A. FEES: THEIR NEED FOR REVISION

To the Editor: Dr. A. Broomberg, in his presidential address reported in the *Journal* of 19 April, says, *inter alia*: 'I do not know of any other profession which finds itself in a similar dilemma nor do I know of any other occupation (industrial or trading) which has entered into or allowed itself to be forced into an iron-clad arrangement whereby its fees or earnings or profits if you like, are kept down at a level which bears no realistic relation to the stark fact of the rise in cost of living.'

It would appear that the Workmen's Compensation Act No. 30 of 1941, amended by Act No. 27 of 1945, is one of those 'iron-clad' arrangements.

Quoting the medical *Handbook*: 'It is an Act of considerable importance in relation to the well-being of the community. The Act provides for the payment of the cost of medical care for workmen injured on duty. The object of this provision is to ensure the speediest possible physical restoration and return to work of the workmen in their own interests and in those of national productivity. The medical profession obviously has a very important role to fulfil.' Having thus established the importance of the Act and the important role played by the medical profession let us continue.

From section 33 the source from which medical fees are payable, are:

'i. *The Accident Fund.* This is controlled by the Commissioner. It is built up of special contributions known as assessments, which are paid annually by the great majority of employers, including all municipalities.

'ii. *The Funds of the Federated Employers Mutual Assurance Company Ltd.* This company is licensed under the Act to undertake the insurance of employers against their liabilities in respect of injured workmen, and covers chiefly the building industry.'

So now we know the source of the revenue from which we are paid. One could liken it to a large Medical Benefit Association, the chief benefit being derived by the employers.

Under section 79 of the Act, 'payment for medical aid shall be in accordance with the scale prescribed from time to time by the Commissioner after consultation with the Medical Association of South Africa'.

It is, therefore, quite clear that provision is made in the Act for a revision of the prescribed scale of fees. It is quite true that for some time now 7½% has been added to the present scale of fees, but this does not constitute a revision of the scale of fees.

A brief comparison of the present scale of fees with the *Tariff of Fees* for *approved* Medical Aid Societies is interesting, bearing in mind that:

(a) The *Tariff* for Medical Aid Societies is a *preferential tariff*.

(o) In the case of Native workmen treated under the Act there is a 50% reduction of fees.

A few examples:—

	Medical Aid Tariff	*W.C.A. Scale of Fees*
Visits	£0 12 6	£0 7 6
Suture of flexor tendon of finger	17 10 0	4 0 0
For each additional tendon ...	8 8 0	2 0 0
Simple fracture carpal scaphoid	10 10 0	5 0 0
Dislocated phalanx	5 5 0	2 0 0
Amputation of finger	7 7 0	2 10 0
Removal of foreign body from the cornea	2 2 0	0 15 0

Section 25 of the Act reads: 'It is expected that practitioners will take the rough with the smooth.' Perhaps it meant to say 'Should not complain if they are taking the rough all the time'.

We have been told through the columns of the *Journal* that it is 'unethical' to treat patients of 'unapproved' Medical Aid Societies at the old *Tariff of Fees*.

Surely, then, there must be something sorely amiss when we are asked to treat injured workmen (whose employers are most certainly not paupers, and therefore surely do not expect *pro deo* work) at the present rate of remuneration, and be rewarded so poorly for work honestly and conscientiously performed.

It seems to me that the time is long overdue for a revision of the scale of fees by the Commissioner in consultation with the Medical Association as provided for in section 7 of the Act. If the Fund cannot afford a higher scale of fees, then the remedy appears to be to increase the contributions made by the employers, and not to exploit the medical profession. The responsibility belongs to the employer, i.e. Industry should shoulder the full responsibility for any injured workman and not expect the medical profession to carry part of that burden by expecting professional services at a rate of remuneration which is grossly unjust.

The Fund can be likened to the prosperous farmer one occasionally meets in one's Native surgery with a sick servant and the story: 'He has been a faithful servant of mine for many years, Doc., is a wonderful worker, and I just don't know what I would do without him. So I want you to do all you can for him—nothing but the best, *but*, Doc., I'm afraid he won't be able to pay you anything as he hasn't very much!'

In other words passing the 'Buck'.

W. Blignaut.

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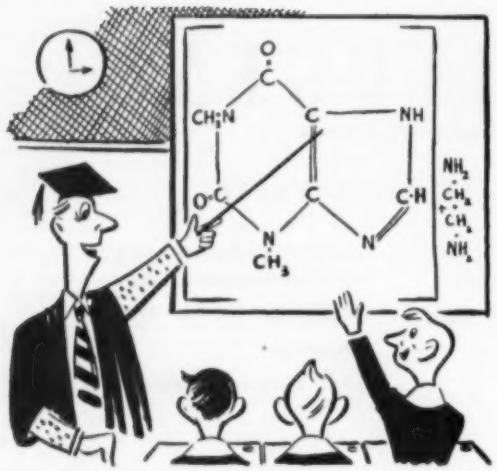

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3. All photographs should be glossy prints unmounted, untrimmed and unmarked. Authors' suggestions for trimming, etc., are most suitably indicated on a duplicate print or diagram.

4. In no circumstances should original X-ray films be forwarded. Glossy prints must be submitted.

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7. A limited but reasonable amount of illustrative and tabular matter is allowed free. Additional material of this sort may be allowed at cost, at the discretion of the Editor.

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White, J. and Brown, A. B. (1946): Arch. Clin. Med., **123**, 167.

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Smith, J. (1946): *An Introduction to Medicine*, 2nd ed., p. 174. Cape Town: John Black, Ltd.

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